

AERO DIGEST

ATION ENGINEERING

MARCH 1955

THIS ISSUE \$1.00

CHARLES M. JAMIESON
3475 SANITARIUM RD
AKRON 12 OHIO

story Issue

put
it
there!

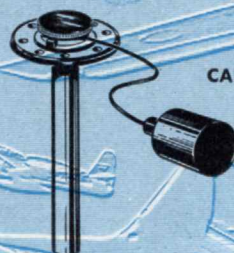
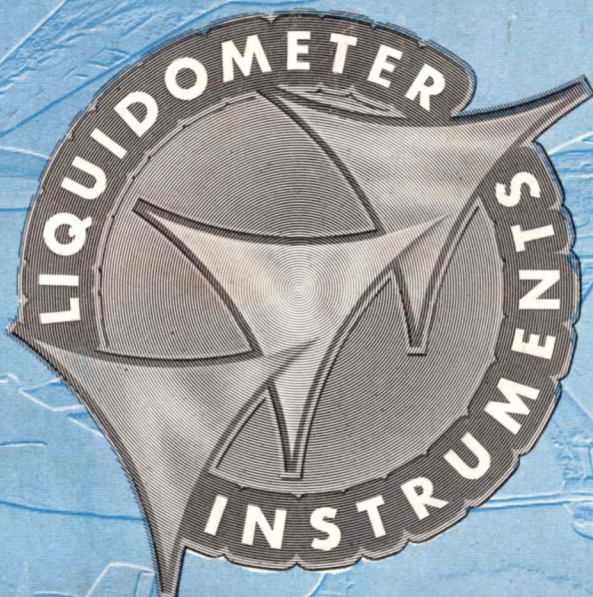
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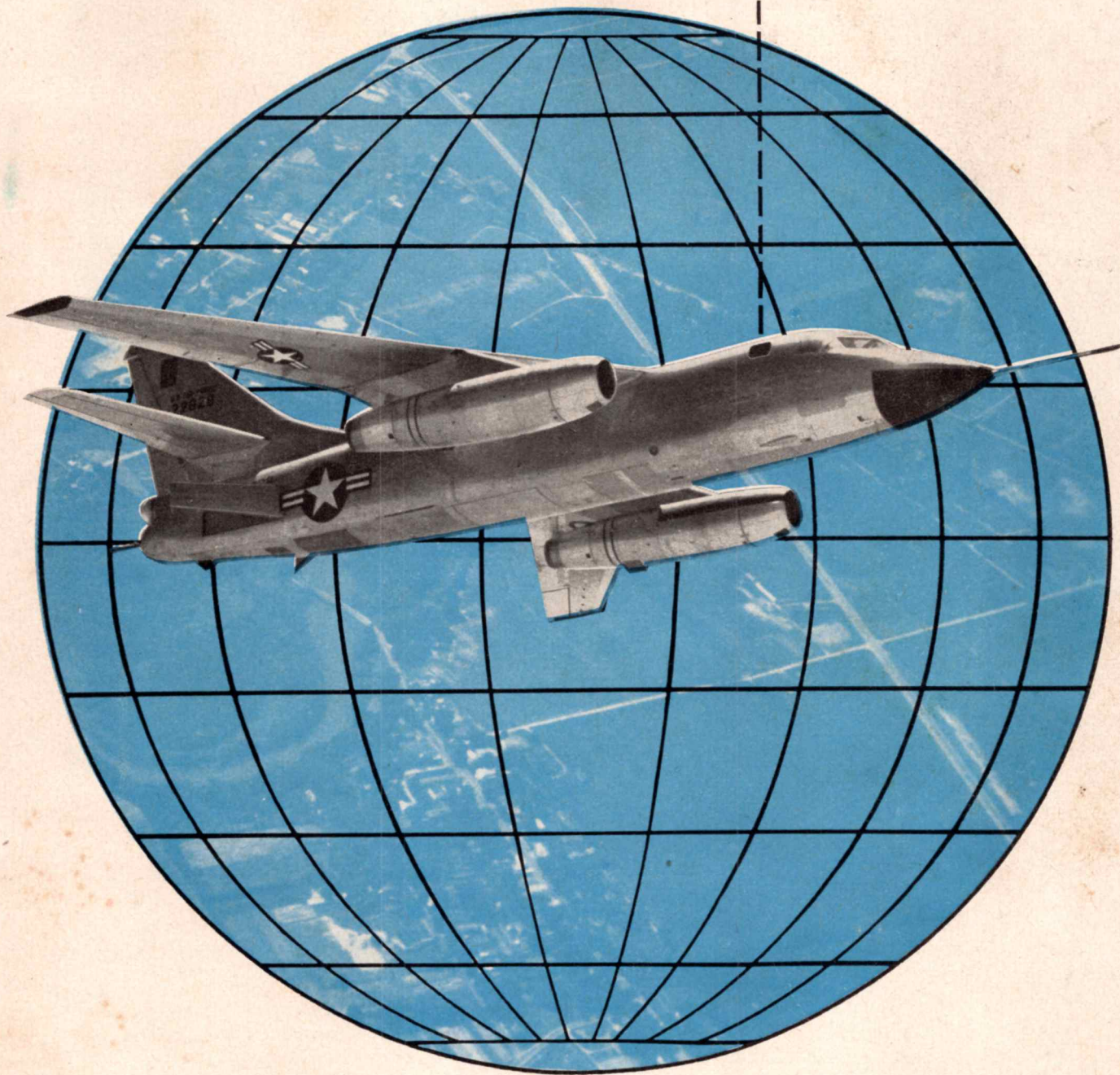
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16th ANNUAL DIRECTORY NUMBER

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AERO NEWS DIGEST

A LIST OF INVENTIONS looking for inventors has just been released by the Washington Office of Technical Services of the U. S. Department of Commerce's National Inventors Council. Pertinent to every engineering field, the list of problems entitled *Technical Problems Affecting National Defense, Supplementary List 1954* adds to an earlier list published August 1954. In the latest one, the National Inventors Council welcomes ideas for solving problems such as the development of miniature I-F transformers, high-index transparent plastics, a method of spot- or seam-welding steel, a wind measuring instrument, a windshield rain deflector for aircraft, a mica substitute, a new oxygen mask material, high-temperature-resistant tires, and a method for measuring odor. The ideas the Council feels show promise will be recommended to the appropriate military agency for investigation and development. (AERO DIGEST would be glad to process ideas for its readers.)

THE ROARBACK they got from industry on a draft directive on turbine engine standardization has made Defense officials slightly skittish on the subject. The preparation of a new directive establishing policy for the development of turbine engines for military aircraft has been assigned to a three-man committee by Secretary of Defense Wilson, and until the committee comes up with something, other officials are reluctant even to discuss what they mean by standardization.

The original draft directive for turbine engine standardization was prepared by the staff of Frank D. Newbury, Assistant Secretary of Defense for Applications Engineering, and was circulated to the military departments and to industry for comment. It proposed specific and drastic limitations—would have re-

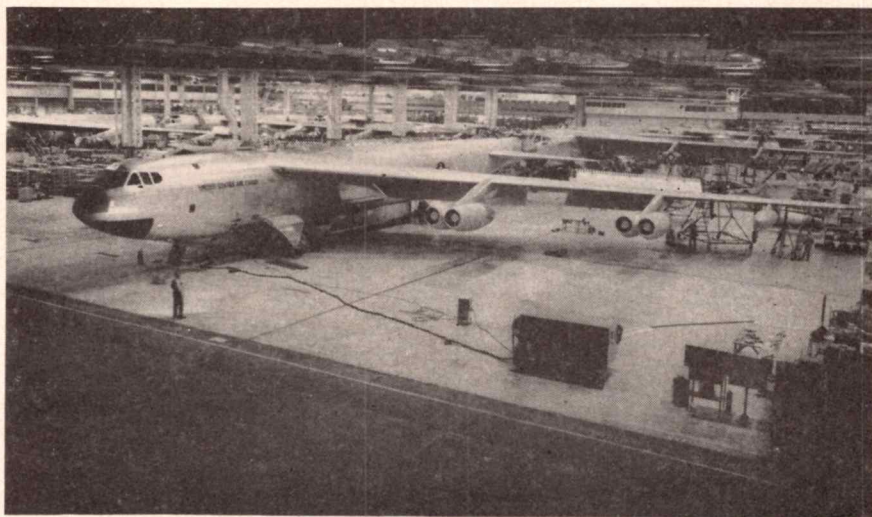
quired that new engine developments be restricted to powerplants of specified size and power ratings. In terms of thrust, for example, each development project would have been confined to an engine 50 per cent more powerful than that rated next lower—specifying thrusts of 10,000, 15,000, 22,500. Moreover, these specified thrusts would have had to be developed in engines with standard categories of diameters. There were, as well, compelling limitations on commitments for tooling, facilities, and other such matters.

THERE WAS enough rigidity in the Standardization directive to get industry thoroughly alarmed; and on December 10, the Board of Governors of the Aircraft Industries Association adopted a resolution condemning the draft directive—AIA's President, Admiral D. C. Ramsey, wrote Secretary Wilson that AIA thought the end results of such a directive would be "no less than catastrophic." That message produced a flurry of second-look at The Pentagon; and last month, Secretary Wilson announced the appointment of the committee to prepare a new

draft directive, covering the same subjects as the original "with any modifications the group wishes to consider and approve."

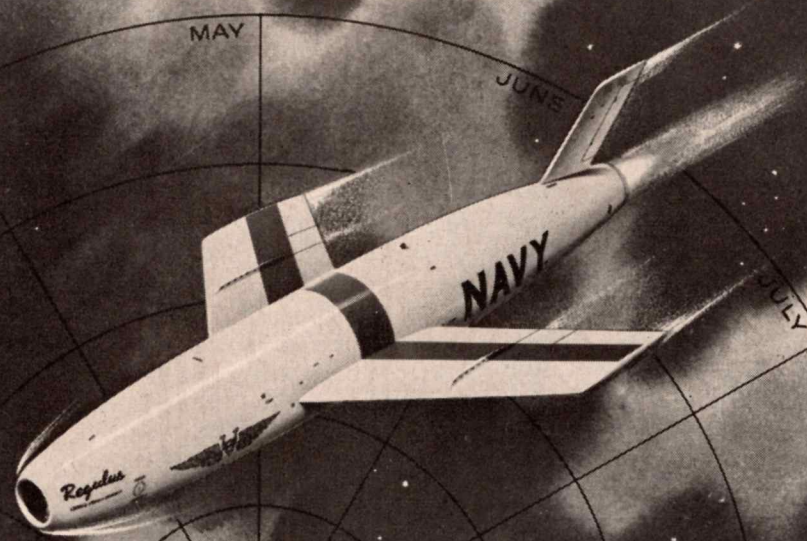
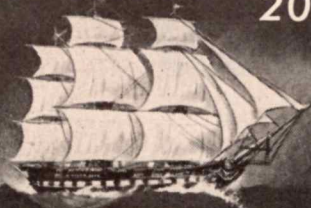
Assistant Secretary Newbury is chairman of the new Standardization committee, with Assistant Secretary (Air) James H. Smith Jr. representing the Navy, and Assistant Secretary (Materiel) Roger Lewis representing the Air Force. Whatever they come up with is almost certain to contain restrictions hitherto unknown in this military procurement field — Secretary Wilson, writing to Admiral Ramsey, said "I consider it highly advisable that we conduct this work according to some long-range plan. . . . Over the past few years there have been too many engine development projects that have failed completely or have seriously delayed aircraft production."

CAST MAGNESIUM outer wing panels are speeding production of Chance Vought's guided missile *Regulus*. Original design called for a sheet metal assembly, which weighed 229 pounds per panel. New



Its vertical tail folded to clear the factory doors, a completed (350,000 pound) Boeing B-52 *Stratofortress* awaits roll-out from company's Seattle plant. B-52 has speed of more than 600 miles per hour, ceiling more than 50,000 feet, and range greater than 6000 miles.

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than just a guided missile. It's a symbol of your New Navy's ability to control the seas and the skies above the seas.



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cast design results in 162-pound panels, a weight saving of 134 pounds per missile. When they come out of the mold the panels have a hollow center, top and bottom skins, inboard fold hinges, internal structure and aileron hinges. They static-test successfully well beyond design load.

IN ITS SEARCH for thermo-setting resin suitable for laminating glass fabrics for military uses, Wright Air Development Center has developed a furan resin that produces low-pressure glass fabric plastic laminates with flexural strengths up to 65,000 pounds per square inch, and edgewise compressive strengths up to 40,000 pounds per square inch. Resins can be prepared from such non-critical materials as corn cobs and other vegetable by-products.

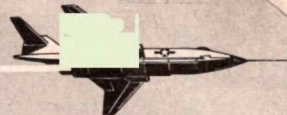
DONALD QUARLES, Assistant Secretary of Defense (R&D), says that about one-half of the total research and development of this country is being devoted to defense needs. Even with this tremendous concentration of manpower on a single objective—defense of the country—Secretary Quarles points out that we are in stiff competition with the Soviet and that industrial employers must recognize an obligation to develop the full potential of each engineer and avoid the waste of his talents on non-technical duties.

The Secretary indicates that in addition to the Nautilus project, there are a half a dozen military projects underway that are developing the use of atomic energy: notably, application of nuclear propulsion to aircraft, to large naval vessels as well as submarines, and an Army project calling for a semi-portable power plant for field use.

DR. THEODORE VON KARMAN, speaking at Brooklyn Polytechnic Institute's Conference on High Speed Aeronautics, said that because of increased maneuverability and lessened resistance the delta wing offers the greatest advantages to the supersonic aircraft of the future.

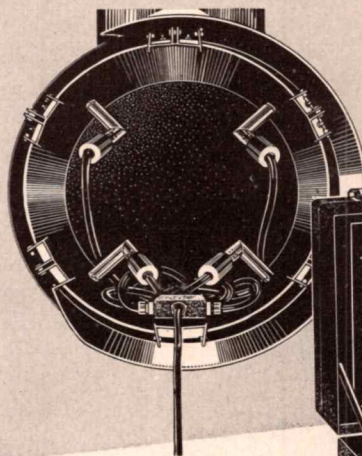
The scientist, now Chief Aeronautical Adviser to the U. S. Air Force and NATO, pointed

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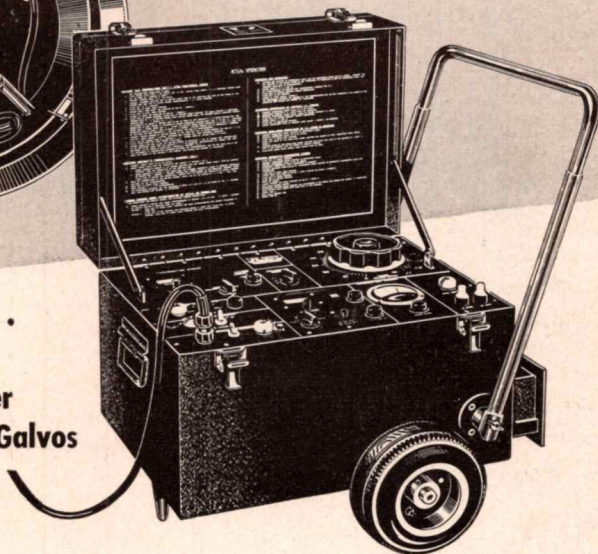
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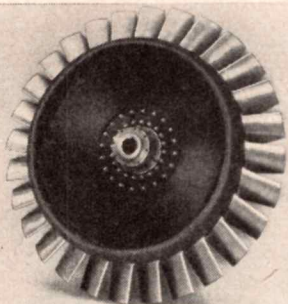


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out that while we can calculate the effects of stability and trim at subsonic and supersonic speeds, predictions are difficult to make, if not impossible today, on the effects on the structure of speeds in the range near sonic speed. Here, devastating flutters might occur in the aircraft sufficient to destroy it. His advice is to crash through the sonic barrier so quickly that serious effects do not have time to occur.

. . .

FAIRCHILD Engine and Airplane Corporation carried their jet augmentation studies into flight test with the recent jet-augmented take-off of their C-123 transport (see picture). Two Fairchild J44 turbojet units were installed on the airplane to provide 2000 pounds thrust in addition to the take-off power furnished by two Pratt and Whitney 2500 horsepower engines. Test data shows that with one engine feathered that the rate of climb during take-off was increased from 150 feet per minute to 500 feet per minute. Drag is minimized by setting the power packages in the wing tips. Further, the designers provide remote controlled seal-off doors on the jets to permit closing the air intake scoops when units are not in use. Official personnel witnessing the tests felt that the use of turbojet augmentation enhances the safety characteristics of twin engine aircraft, particularly with respect to their ability to recover more rapidly from emergency situation in which pilots may experience a main engine failure during take-off or in the period of initial climb.

. . .

FLIGHT CONDITIONS at 15 to 20 Mach Number are being

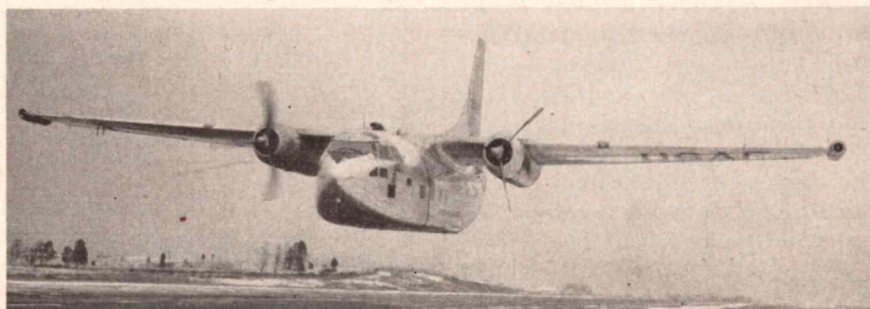
simulated in a helium powered hypersonic wind tunnel at Forrestal Center's Gas Dynamics Laboratory where the validity of existing aerodynamic theories are being tested. Professor Daniel Sayre, Director of the Center, credits Professor Seymour Bogdonoff with development of the tunnel, says that speeds higher than Mach 20 are possible only in free space, outside the earth's atmosphere. He noted that on the basis of what the laboratory has already accomplished, that "it is now apparent that existing theories enable us to predict only general trends at hypersonic speeds, for they deviate quite strongly from factual values obtained in the laboratory."

. . .

DR. BOGDONOFF observes that at low supersonic speeds, from one to five Mach Number, that "the main problem is the old one of designing for minimum drag; but at ultra high speeds the problem has changed to one of transient aerodynamic heating which may result in the melting or burning of the plane or missile." Results of research in the hypersonic tunnel "point to the need for modifying the hypersonic theories concerned with such phenomena as boundary layers and heat transfer."

. . .

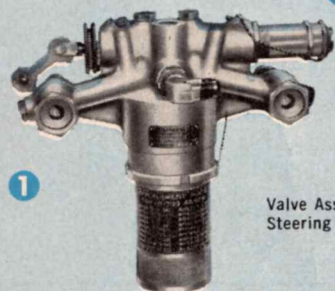
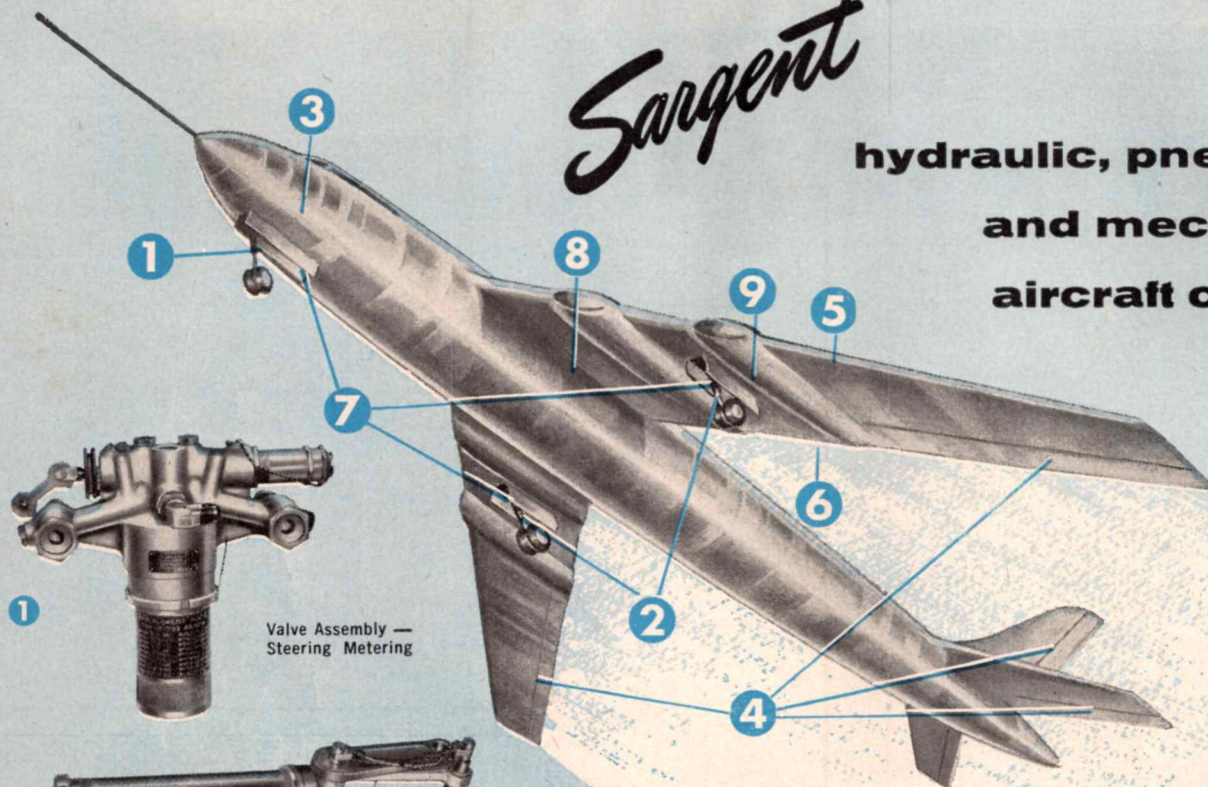
ARDC's Wright Air Development Center is using atomic energy to vulcanize rubber. The method seems promising for vulcanizing rubber for specialized uses such as for producing high-temperature oil resistant rubber compounds, and for improving low-temperature serviceability of rubber. New process uses gamma radiation in place



Fairchild C-123B transport in jet-augmented take-off.

Sargent

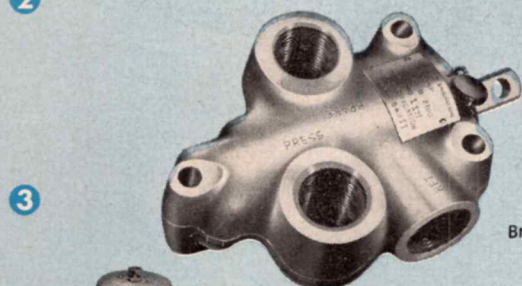
**hydraulic, pneumatic
and mechanical
aircraft controls**



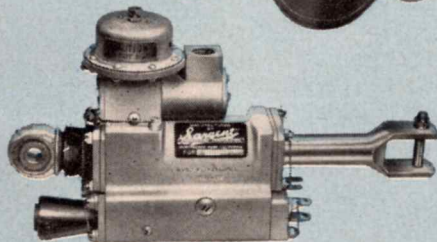
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Steering Metering



Main Landing Gear
Retractor



Brake Valves



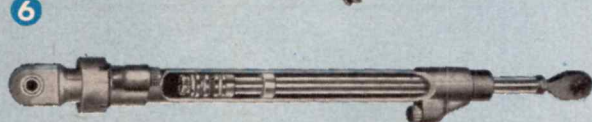
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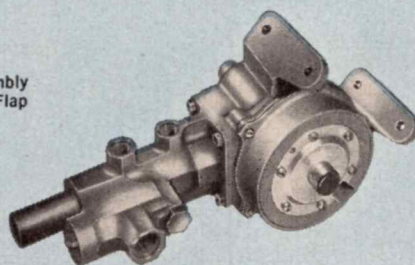
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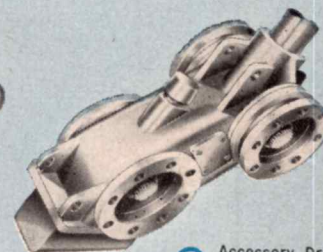
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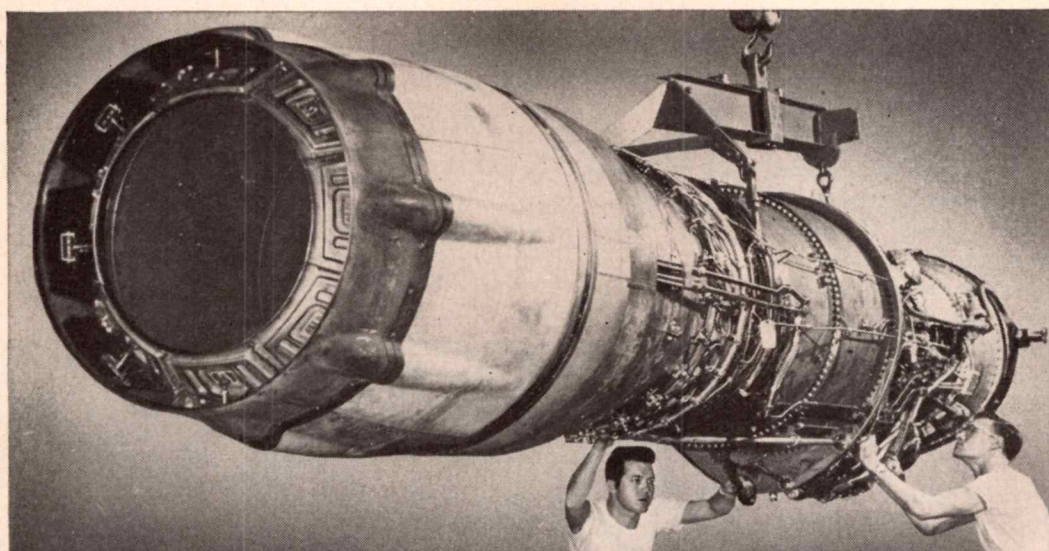
NEW VOODOO FIGHTER

The most powerful jet fighter ever built in America—the first with two J-57 turbojets—is joining the U. S. Air Force's supersonic team of "century series" fighters.

It is McDonnell's F-101 Voodoo, a long-range fighter-bomber capable of carrying atomic weapons and slated for service with the Air Force's Strategic Air Command.

Like its supersonic sisters, the F-100 Super Sabre and the delta-winged F-102, the F-101 Voodoo is designed to take full advantage of the tremendous thrust provided by Pratt & Whitney Aircraft J-57s and their afterburners.

In the new Voodoo, Pratt & Whitney Aircraft's J-57 continues to make its vital contribution to American Air Power.



OVER 20,000 POUNDS OF THRUST and outstanding fuel economy are available in the F-101 from twin P&WA J-57s and special afterburners, like that on the J-57 shown above. They are about two feet shorter than other J-57 afterburners. This engine equipment makes the long-range Voodoo the most powerful fighter known today.

Pratt & Whitney Aircraft

MAIN OFFICE AND PLANT: EAST HARTFORD, CONNECTICUT • BRANCH PLANTS: NORTH HAVEN, SOUTHTON, MERIDEN
In Canada: Canadian Pratt & Whitney Aircraft Co., Ltd.

of conventional chemical and heat treating methods. It is reported that this technique produces vulcanization equal to or better than that achieved by usual methods. No residual radiation has been detected in the compounds vulcanized. Intensity of gamma radiation, from cobalt 60, governs degree of vulcanization.

• • •

IN LINE WITH ITS PROGRAM of researching nuclear energy for industry, Battelle Institute is installing one of the country's largest gamma radiation sources. One of the source's important uses will be to study the effects of radiation on electronic components, lubricants, and engineering construction materials. The results of these studies could lead to the development of more radiation-resistant materials for parts of tomorrow's nuclear-powered air, sea and land craft.

• • •

AERODYNAMIC PHENOMENA never before experienced by man caused the death of engineering test pilot George S. Welch, says North American Aviation's vice-president Raymond H. Rice. Last October, while Welch was diving a supersonic F-100 *Super Sabre*, his plane disintegrated. An intensive investigation of the wreckage was made: parts were identified, photographed and categorized where they lay. Detailed maps were drawn to show the pattern of fall. Over 170 witnesses were interviewed. Back at the plant, the wreckage was re-assembled and studied piece by piece by engineers familiar with the plane to find out how the pieces had come apart, and why. Rice points out that "because it was a test airplane it was rigged with many special recording instruments, all of which were operating properly right up to the moment of disintegration, and whose records told an irrefutable story of both pilot's and airplane's final actions." It was some oscillograph records that gave the final answer. Welch had encountered a maneuver never before experienced under similar circumstances which, according to Rice, "was a high, nose-right

yaw." The investigation committee's formal report says: "The unprecedented high angle of yaw experienced during the test was in excess of the design limit of the airplane, thereby causing disintegration."

• • •

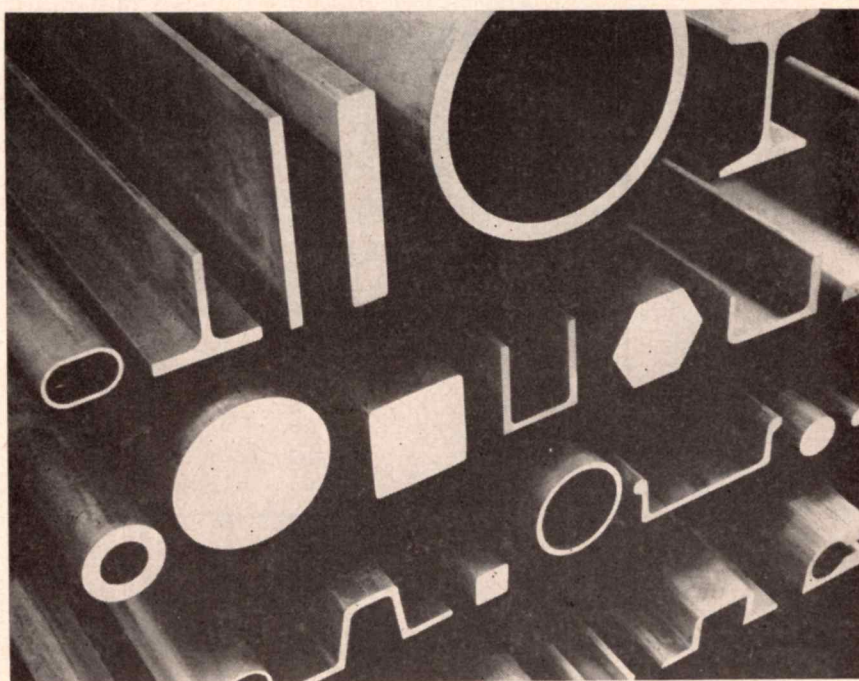
THE HELIUM HYPERSONIC TUNNEL at the Gas Dynamics Laboratory permits as much as ten minutes of continuous operation under flight conditions. The test section measuring four by eight inches operates at pressures up to 100 times atmospheric and enables scientists to explore flight at speeds from about 700 to 17,000 miles per hour at altitudes from sea level to about 150,000 feet. It is believed that this is the widest range of test conditions in any laboratory in the world. The tunnel employs an open system that discharges to the atmosphere through a silencer.

• • •

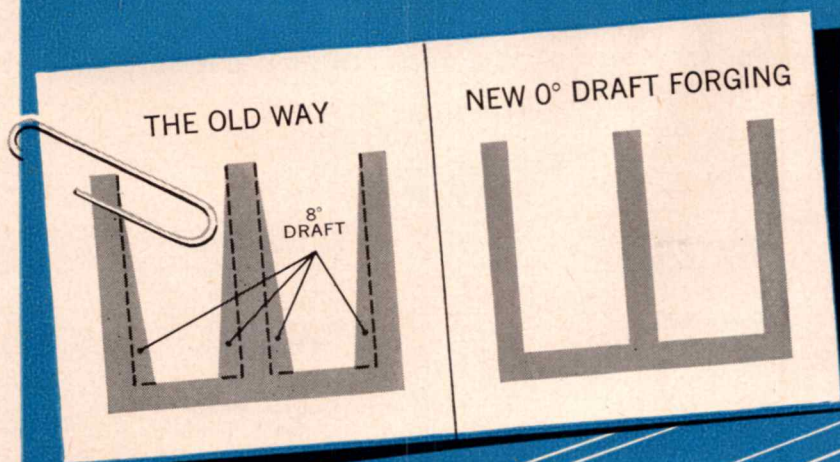
A SIMPLE, RAPID method for measuring the abrasive resistance of organic coatings on metals has been developed by the National Bureau of Standards. Their investigations are part of the Bureau of Aeronautics' con-

tinuing program to produce highly durable, scuff-resistant finishes for naval aircraft. In the procedure, carbon dioxide gas under controlled pressure propels an abrasive powder from a vibrating storage chamber through a nozzle to impinge at high speed upon a test specimen. The mounting arrangement for the test specimen and nozzle assembly permits rotational, back and forth, or up and down adjustment, while the angle between the nozzle tip and surface to be abraded is adjusted by a graduated rotating disk attached to the nozzle shaft. A ninety degree angle simulates the leading edge type of erosion met by aircraft in flight; while the 45 degree angle simulates scuffing wear, which aircraft receive during maintenance operations. The spent abrasive particles and coating debris are removed through a vacuum exhaust outlet at one of the test chambers. This abrasive jet method has been found to distinguish significantly between materials difficult to differentiate by other means.

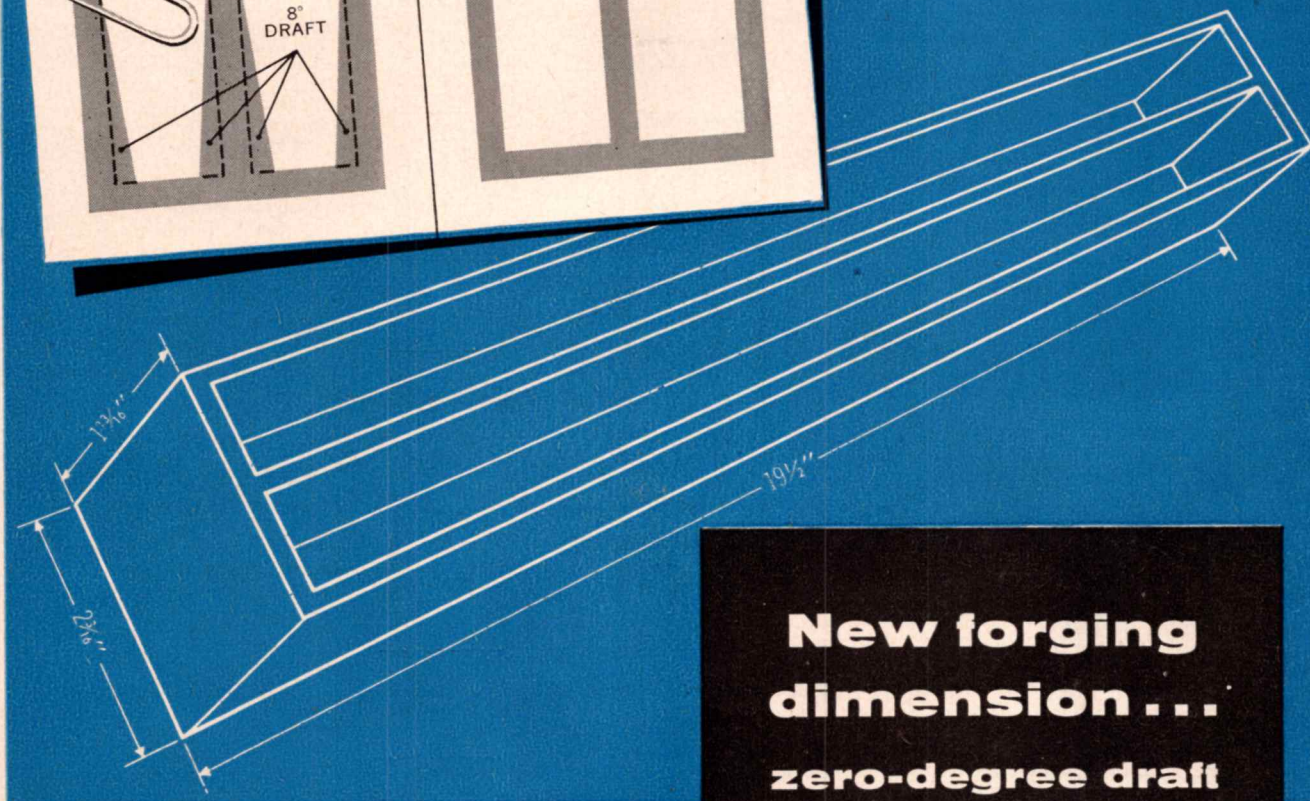
WILLIAM BELLER



A wide variety of standard and special extruded magnesium shapes, including angles, bars, tubes, channels, I-beams and rectangles, are now mass produced by the Dow Chemical Company for tooling and other uses. First showing to the tooling industry is at the ASTE Western Industrial Exposition this month.



Perpendicular sides and parallel surfaces made finish milling unnecessary on this No-Draft aircraft forging. Finished-part cost was significantly reduced, and maximum mechanical properties were retained by the Harvey No-Draft forging method.



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dimension...
zero-degree draft**

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Now, Harvey goes one step farther and brings you *No-Draft* Aluminum Forgings that eliminate complex machining between forging and final product and reduce the all-important *finished-part* cost. Excellent working properties and minimized scrap lower cost even further.

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Let Harvey help you improve your final design with a *No-Draft* forging so that you actually buy "parts instead of raw materials."



For your aluminum needs, call a Harvey Field Engineer today. His one job is to put *custom-designed* aluminum to work for you. Besides *No-Draft Forgings*, he can help you with other important forms of press-forged aluminum such as:

- impact extrusions or impact forgings
- close-tolerance forgings
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Bourns

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for AIRCRAFT and
GENERAL INDUSTRY

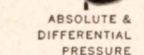
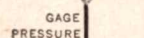
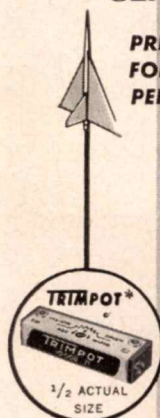
PRECISION ENGINEERED FOR DEPENDABLE PERFORMANCE

Bourns instruments feature the finest design and workmanship in wire-wound potentiometry. Their precise electrical signals, requiring no amplification, are used in control systems, telemetering networks and recording circuits. Rugged construction guarantees accurate and dependable performance during the severe shock, vibration and acceleration conditions encountered in aircraft and industrial applications.

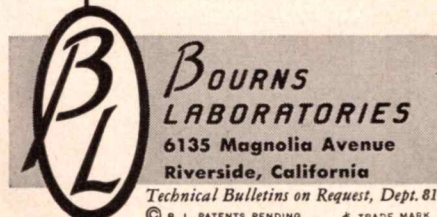
Physical variables such as linear displacement, acceleration and pressure are measured to an accuracy of 0.25% of instrument range. Single or dual potentiometers and linear or functional outputs are a few of the many characteristics that can be provided. Besides the hundreds of standard models and ranges available, special designs may be developed for individual requirements.

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AVIATION ENGINEERING

PUBLISHED BY THE AERONAUTICAL DIGEST PUBLISHING CORPORATION

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COMING—April Issue

CORROSION—FACTORS AND PREVENTION—One of the most complete and accurate guides for the engineer faced with the problem of judging, designing against and preventing corrosion in aircraft. Besides describing the mechanics of corrosion in one metal, between dissimilar metals, and between metal and non-metal, the article includes tables on the comparative tendency of dissimilar metals structurally connected to corrode, on surface treatments required prior to finishing, on interior and exterior finish requirements, on finish of firewalls and interior surfaces on the engine side, and on applicable specifications for these finishes.

APPLICATION OF ROCKET POWER TO HELICOPTERS—An article about rocket power for helicopters with emphasis on the current peroxide ROR systems versus the application of solid propellant motors.

ZENITH "covers" the "stinger" in the Navy Neptune's tail



The U.S. Navy Neptune — Lockheed's P2V-5 — has a new elongated "stinger tail" which encloses even more anti-submarine equipment than standard models carry. These new weapons seek out and localize enemy submarines lurking hundreds of feet beneath the ocean's surface. The fiberglass reinforced plastic cone enclosing and protecting this highly sensitive and costly electronic equipment is another outstanding example of ZENITH specialization in radome production. For a speedy solution to any production problems in this field, contact Zenith Plastics Co., Gardena, California.

ZENITH PLASTICS CO.  gardena, calif.



Allison T40 Turbo-Prop lifts Navy fighter straight up

When the Navy's revolutionary new interceptor — the Convair XFY-1 — takes off and lands, it gets all its lift from its dual rotating propellers which are driven by Allison T40 Turbo-Prop engines.

That means the power package produces greater thrust than the weight of the aircraft for take-off and slightly less thrust than weight for landing. This delicate landing operation requires the engine to deliver positive and dependable power in the exact amount called for by the pilot.

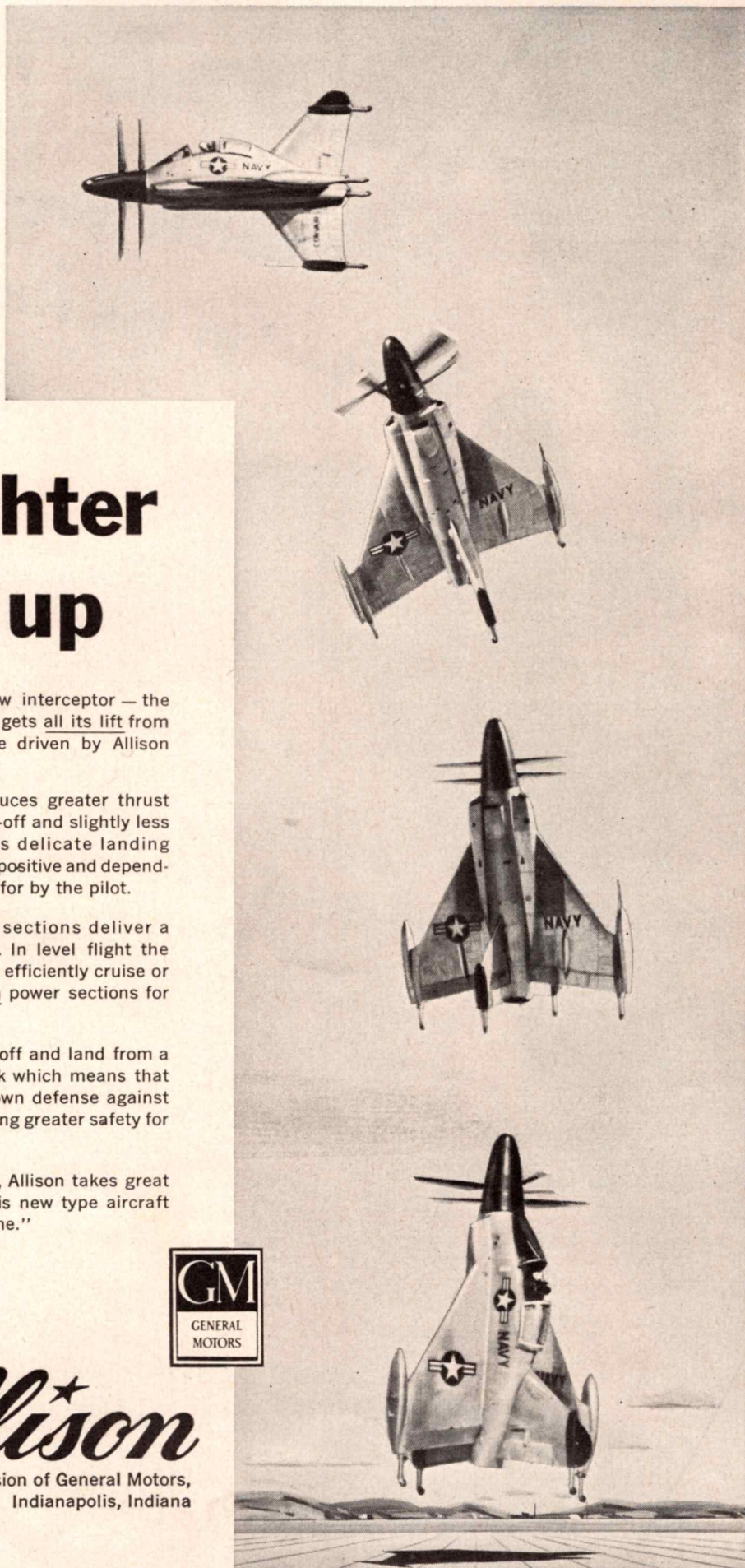
The Allison T40 engine twin power sections deliver a mighty 5850 horsepower for take-off. In level flight the pilot can shut off one power section to efficiently cruise or he can open the throttle wide on both power sections for maximum power and speed.

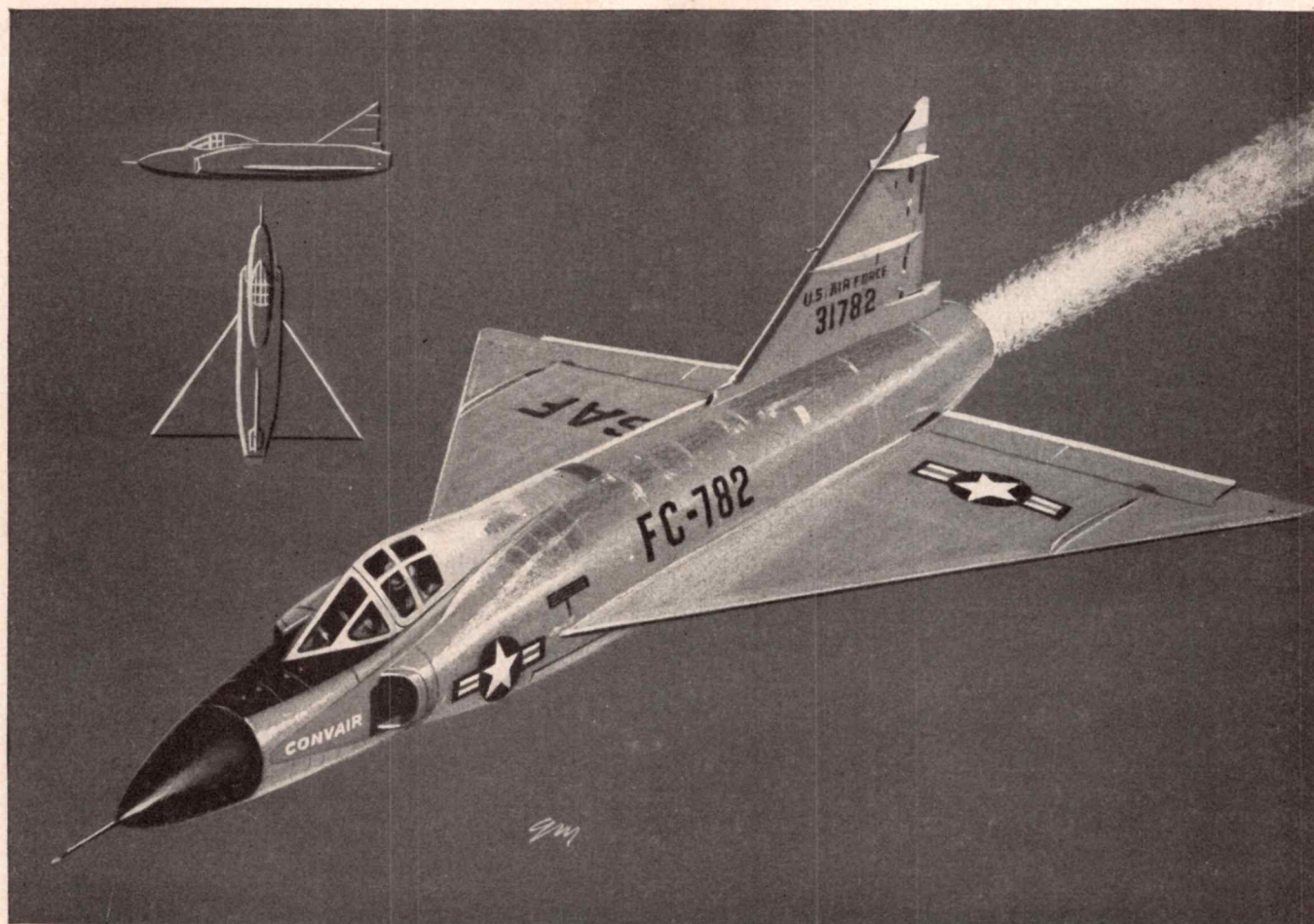
This VTO fighter was designed to take off and land from a destroyer's fantail or a freighter's deck which means that each ship in a convoy can carry her own defense against attacks for the entire voyage — promising greater safety for these surface craft.

Along with Convair and the U. S. Navy, Allison takes great pride in the spectacular success of this new type aircraft and in the simple accolade—"Well Done."



Allison
Division of General Motors,
Indianapolis, Indiana





CONVAIR F-102

Deadly New Delta-wing Interceptor

Powered by a Pratt & Whitney Aircraft J-57 turbojet engine with afterburner, the supersonic, delta-winged F-102 climbs like a rocket to altitudes reaching into the stratosphere. She is the latest 'round-the-clock interceptor, now in production at Convair Division of General Dynamics Corporation.

Like other jet aircraft, this new Convair interceptor has many parts made of Inco Nickel and Inco Nickel Alloys. That's because safe and satisfactory performance of supersonic aircraft demands that many parts have the unusual combinations of heat resistance, corrosion resistance, strength and ductility found in Inco Nickel and Inco Nickel Alloys.

At right you see where Inco Nickel Alloys supply outstanding properties for difficult service. Perhaps one of these alloys can solve your metal problem, too. Inco's Technical Service Section is ready to help you investigate. Why not outline your problem for their study.

THE INTERNATIONAL NICKEL COMPANY, INC.

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Rotor discs
Afterburner bellows
High temperature bolts

Inconel "W"

Tail cones
Afterburners

Nimonic Alloys

Combustion liners
Transition sections
Vaporizer tubes
Turbine blades
Rotor discs

Incoloy "T"

Transition sections
Combustion liners

Monel

Lock wire
Fine fuel line tubing
Rivets

Nickel

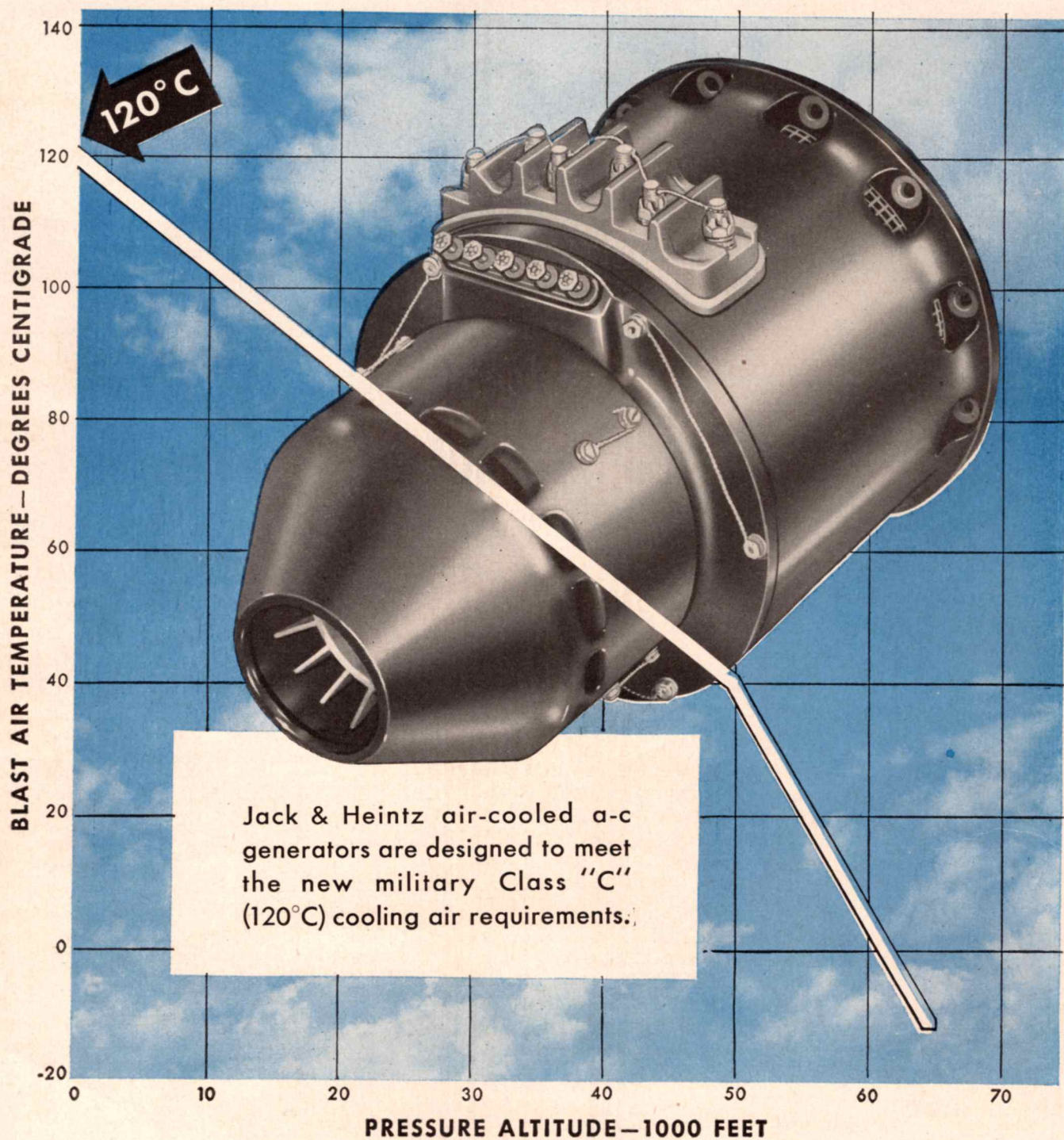
Electrical and
electronic gear
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in other materials



Nickel Alloys

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"S"® MONEL • INCONEL® • INCONEL "X"®
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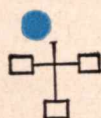
A-C GENERATORS...



JACK & HEINTZ *Rotomotive*

a report from JACK & HEINTZ

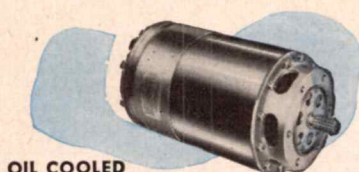
New thermal designs give J&H generators wide range of applications



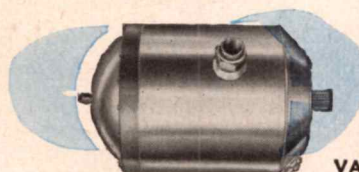
Jack & Heintz air-cooled a-c generators will operate in 120°C environmental conditions. Improved thermal design, including the use of high-temperature insulating materials and

increased handling capacity of cooling air; makes this possible. For more severe environmental conditions, Jack & Heintz has developed oil-cooled, vapor-cooled and thermal-lag machines.

Environment-Free Generators



OIL COOLED



VAPOR COOLED

JACK & HEINTZ A-C GENERATORS FOR HIGH-PERFORMANCE AIRCRAFT

	AIR COOLED				OIL COOLED		VAPOR COOLED		THERMAL LAG
Nominal Rating	20 kva	30 kva	40 kva	120 kva†	20 kva	40 kva	12 kva	30 kva	8 kva
Specification(Ref)	MIL-G-6099	MIL-G-6099	MIL-G-6099	MIL-G-6099	MIL-G-6099	MIL-G-6099	J&H	J&H	J&H
Drawing	J&H G284	J&H G282	J&H G281	J&H G180	J&H G192	J&H G190	J&H G75	J&H G188	J&H G186
Volts	120/208	120/208	120/208	120/208	120/208	120/208	120	120	120/208
Speed	6000	6000	6000	6000	8000	6000	12,000	12,000	12,000
Phase	3	3	3	3	3	3	3	3	3
Frequency	400	400	400	400	400	400	400	400	400
Power Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.8	0.8	0.9
Weight	67	75	86	250	95*	165*	46	66	42
Moment	270	370	400	2100	1100*	2250*	270	475	230
Length	14.18	15.86	16	22	23.5	27.25	10.69	13	13
Diameter	11	11	11	11	11	13	9	9	8
Mounting and Type	AND10266 XVI-A	AND10266 XVI-A	AND10266 XVI-A	AND10267 XVII-C	AND10266 XVI Spl	AND20006 XVI Spl	AND20002 XII-E	AND20002 XII-E	AND10262 XII-A

*Includes weight of constant speed drive.

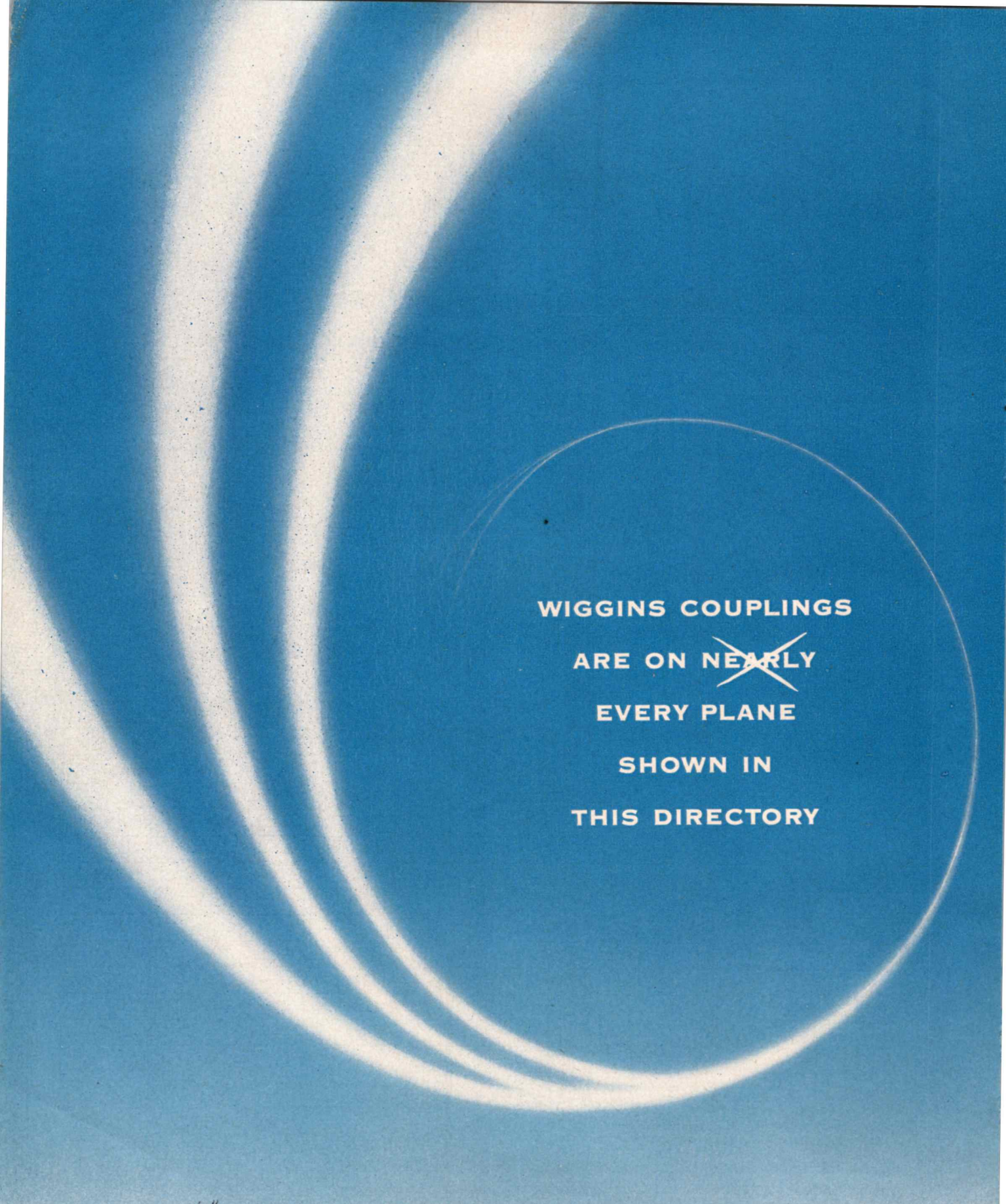
†Blast air temperature limits of MIL-G-6099 apply.

Military specification numbers as used herein are for purposes of product identification only and do not necessarily imply specification conformity.

Jack & Heintz engineering personnel and manufacturing facilities are geared to undertake design and production of complete a-c systems or individual components. We invite your inquiry. Write Jack & Heintz, Inc., 17631 Broadway, Cleveland 1, Ohio. Export Department: 13 East 40th Street, New York 16, N. Y.

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AERO DIGEST

16th Annual Directory Number

Original sources continuously furnish AERO DIGEST with data for its Directory Number. With this information, the Editors annually revise the previous Directory, making each issue the outstanding contemporary reference volume in the aircraft industry.

These continuous revisions have been going on for two decades, except for the war years. Every March the magazine faithfully records the status of all aircraft, powerplants and, more recently, missiles in current production or in widespread use in the United States. In addition, AERO DIGEST includes an extensive Industry Section which comprises a buyers' guide to aircraft, powerplant, accessory and equipment manufacturers, together with the names and titles of their chief executives.

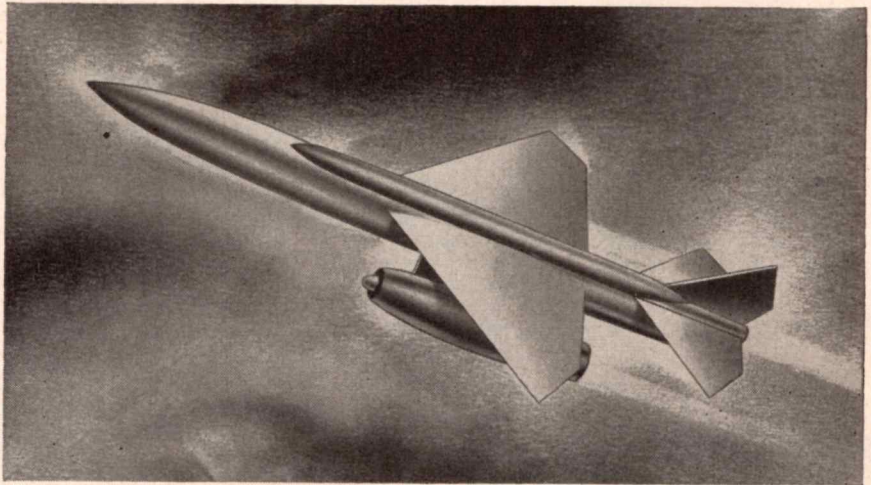
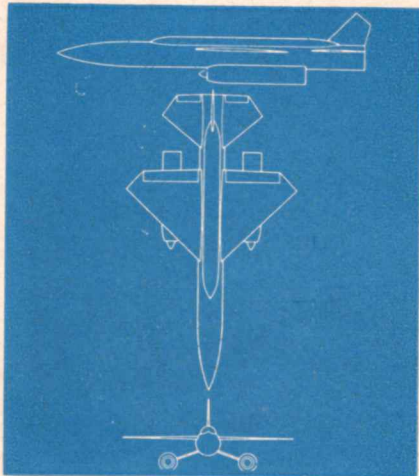
That the Directory Number is a standard reference in the aircraft field is annually proven by our staff, who find that in nearly every case of checking available literature for some hard-to-get data, the material that AERO DIGEST originally developed and published is used by secondary sources.

We therefore hope that all readers will find the present Directory Number, our Sixteenth, the same authoritative and valuable standard it has always been.

THE EDITORS

GUIDED MISSILES

BOEING F-99 BOMARC SURFACE-TO-AIR



Air defense of the continental United States, and forward areas. Land launched. Pilotless interceptor type that may ultimately carry air-to-air missiles for launching, and then return to base. Under development. Manufacturer: Boeing Airplane Company, Seattle, Washington.

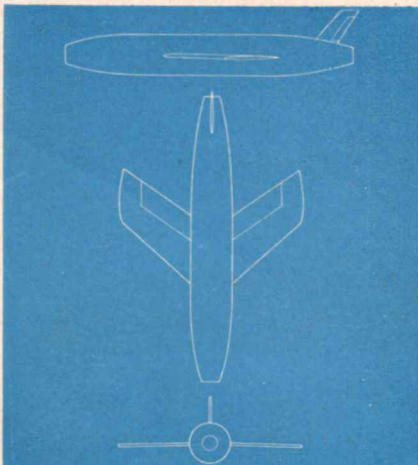
SPECIFICATIONS: Span 36 ft.;

Length 66 ft.; Height 16 ft.; Gross weight 8500 lb.; Propulsion two ram-jet engines plus solid-propellant internal rocket booster.

PERFORMANCE: Speed M 2; Altitude 60,000 ft.; Range 100 mi. plus.

GUIDANCE: Radar or infra-red homing, command guidance.

CHANCE VOUGHT REGULUS SURFACE-TO-SURFACE



Surface target weapon. Submarine, ship, or land launched. In production. Sperry Gyro Co. flight stabilization system. Test and training versions have landing gear effecting missile recovery. Manufacturer: Chance Vought Aircraft, Inc., Dallas, Tex.

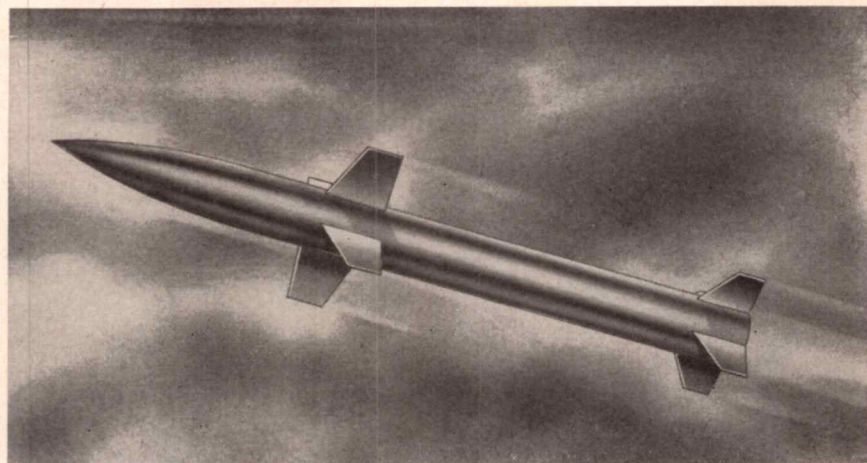
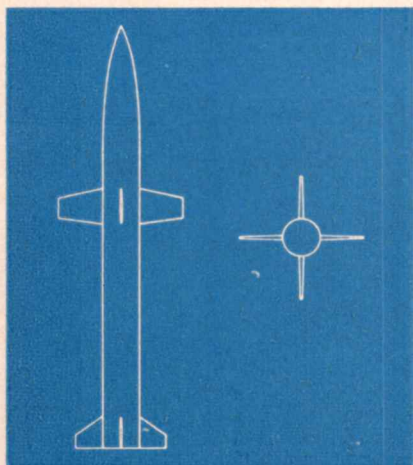
SPECIFICATIONS: Span 21 ft.;

Length 32 ft.; Height 9 ft. 6 in.; Gross weight 14,000 lb.; Propulsion Allison turbojet J33-A-10, 4000 lb. static thrust; Launched by two 1000 lb. solid fuel boosters.

PERFORMANCE: Transonic speeds. Range 500 mi. plus.

GUIDANCE: Command system.

CONVAIR TERRIER SURFACE-TO-AIR



Anti-aircraft weapon for air defense of the fleet and marine ground bases. Shipboard launched. In production. Bendix guidance system.

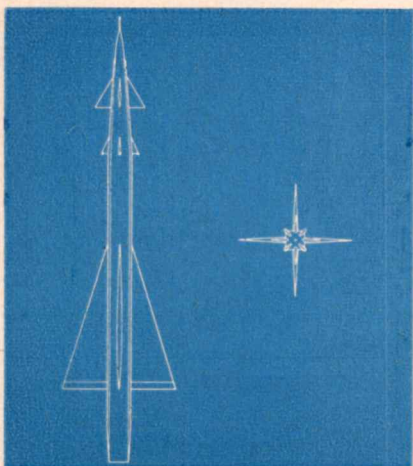
SPECIFICATIONS: Span 4 ft. 1 in.; Length 14 ft. 8 in.; Diameter 12 in.

Gross weight 3360 lb.; Propulsion solid-propellant booster rocket.

PERFORMANCE: Speed M 2; Altitude 60,000 ft.; Range 8 mi.

GUIDANCE: Command, beam rider.

DOUGLAS NIKÉ SURFACE-TO-AIR



Air defense of continental United States, and forward areas. Land launched. In production. Western Electric guidance system. First quantity production, home-defense missile. Larger versions in development. Manufacturer: Douglas Aircraft Co., Inc., Santa Monica, Calif.

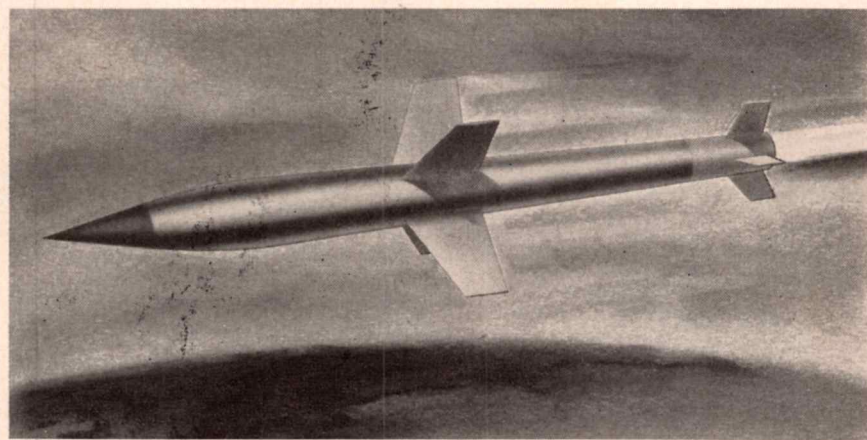
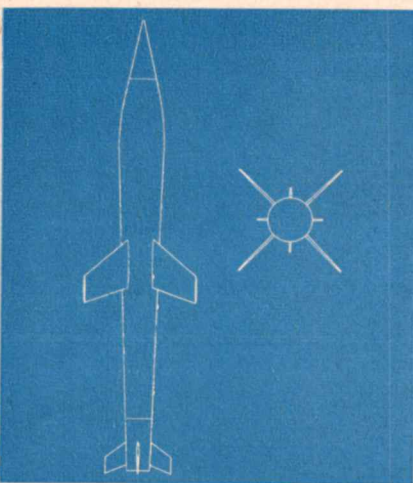
SPECIFICATIONS: Span 5 ft. 2 in.;

Length 20 ft.; Dia. 12 in.; Gross weight 1000 lb.; Propulsion liquid-propellant rocket; Launching by solid fuel booster unit.

PERFORMANCE: Supersonic; Range 30 mi.; Effective altitude 75,000 ft.

GUIDANCE: Command system and semi-active homing.

FAIRCHILD PETREL AIR-TO-SURFACE

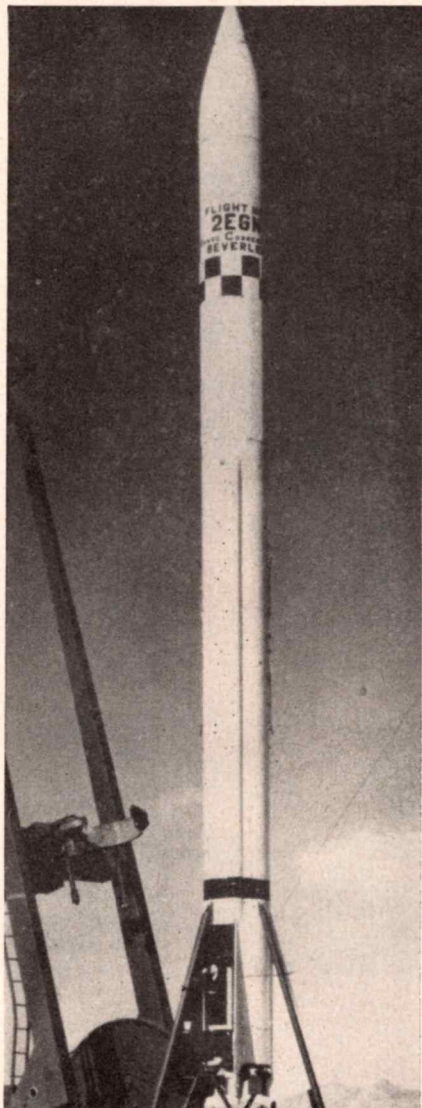


Anti-submarine. Carrier may be Bell HSL-1 anti-submarine helicopter.

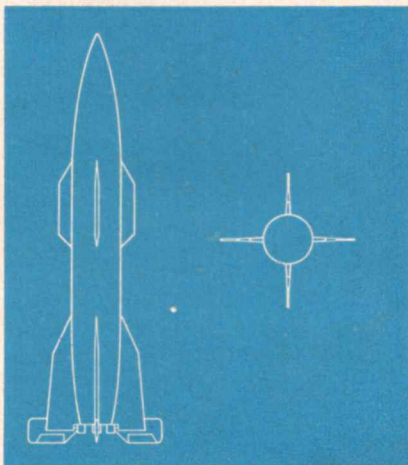
SPECIFICATIONS: Propulsion Fairchild J-44 turbojet, 1000 lb. thrust

(approx.).

GUIDANCE: Glide to water, self-homing underwater.

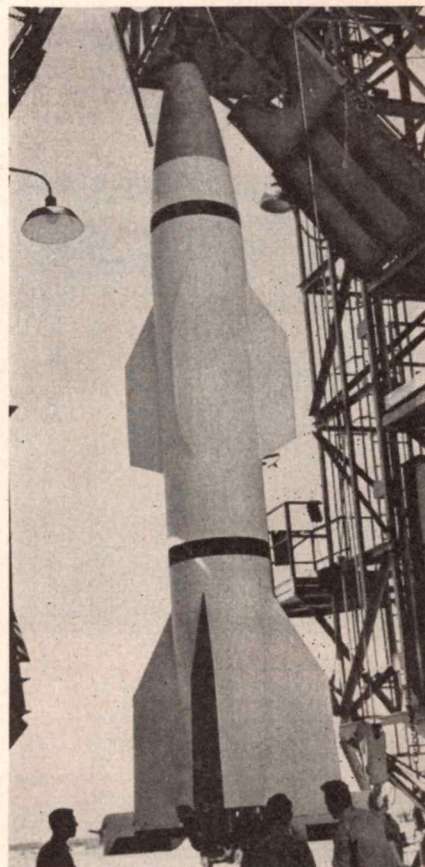


GENERAL ELECTRIC HERMES SURFACE-TO-SURFACE



Hermes A-1 is development of German Wasserfall missile. Other Hermes missiles in development, A-2, A-3, B. Part of broad program of basic rocket and fuel research on artillery-type missiles. Hermes B is design study for supersonic ramjet missile. Hermes C-1, three step, two rockets and hypersonic glider, is design study for very long range (thousands of miles) missiles. B and C-1 studies transferred to Redstone arsenal. Manufacturer: General Electric Co., Sydney, N. Y.

SPECIFICATIONS: Span 8 ft. 2 in.; Length 25 ft. 5 in.; Dia. 2 ft. 10 in.;



Gross weight 8,000 lb. (approx.); Propulsion liquid-propellant rocket (nitric acid and aniline), 13,000 lb. thrust.

PERFORMANCE: Speed M2; Altitude 100,000 ft.; Range 50 mi.

GUIDANCE: Beam rider.

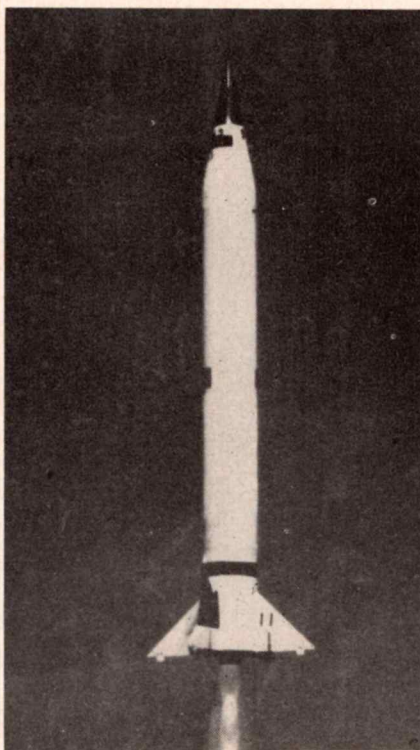
FIRESTONE CORPORAL SURFACE-TO-SURFACE

Army tactical support of ground forces. Land launched. In production. Gilfillan Bros. Inc. guidance system. Atomic or conventional warhead. Capable of engaging targets beyond ranges of artillery and 280mm atomic cannon. Early test models are: Private First Class, WAC Corporal. Manufacturer: Firestone Tire and Rubber Company, Los Angeles, Calif.

SPECIFICATIONS: Length 40 ft.; Diameter 30 in.; Gross weight 12,000 lb.; Propulsion liquid-propellant rocket.

PERFORMANCE: Speed M 3; Ceiling 260,000 ft.; Range 150 mi.

GUIDANCE: Beam-rider, ballistic trajectory after motor cut-off.



MARTIN VIKING HIGH ALTITUDE RESEARCH

Naval Research Laboratory Viking program to investigate physical state of upper atmosphere to 200 miles, nature and properties of ionosphere, solar and terrestrial radiations, physics of high energy particles by high altitude cosmic ray studies. Vikings 1 to 14 varied slightly in dimensions and design payload.

SPECIFICATIONS: Length 42 ft. (approx.); Diameter 40 in. (approx.); Gross weight 15,000 lb. (approx.); Propulsion liquid-propellant (oxygen and alcohol, with hydrogen peroxide turbo-pump injection system) rocket, 20,000 lb. thrust.

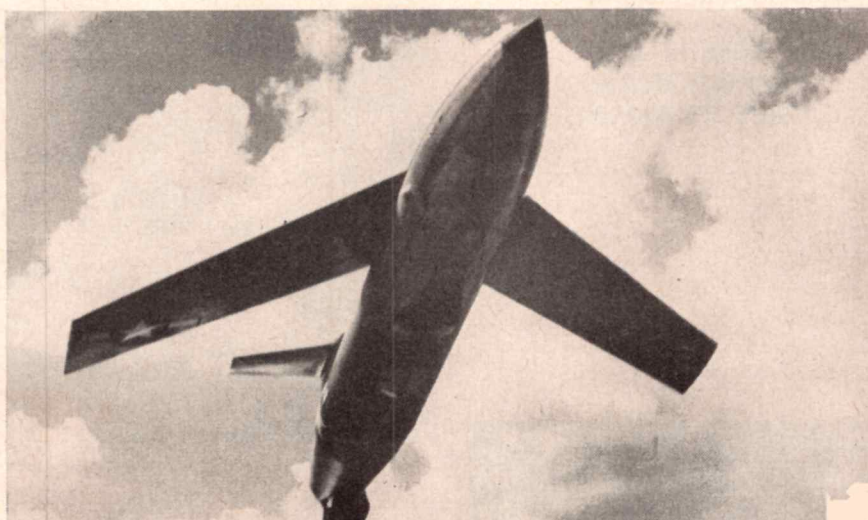
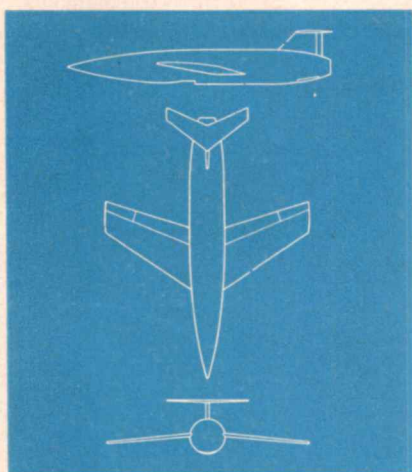
PERFORMANCE: World's single stage rocket altitude record of 158 miles. Speed of 4300 mph obtained.

GUIDANCE: Gyro-controlled tilting of entire thrust unit.

MISSILES AND MISSILE ENGINEERING...

AERO DIGEST IN JULY

MARTIN B-61 MATADOR SURFACE-TO-SURFACE and AIR-TO-SURFACE



Air Force, tactical air attack missile. Launched from mobile platform. Pilotless bomber squadrons equipped with B-61 are in Germany. New versions in development. Manufacturer: The Glenn L. Martin Co., Baltimore, Md.

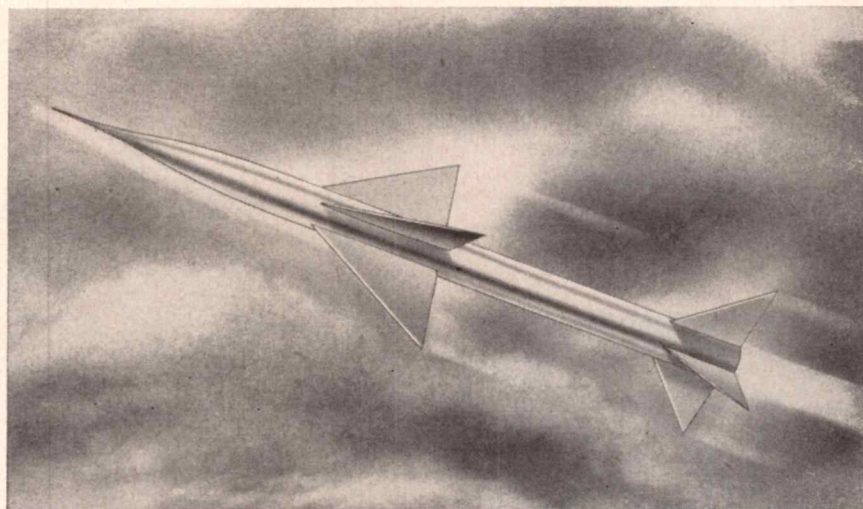
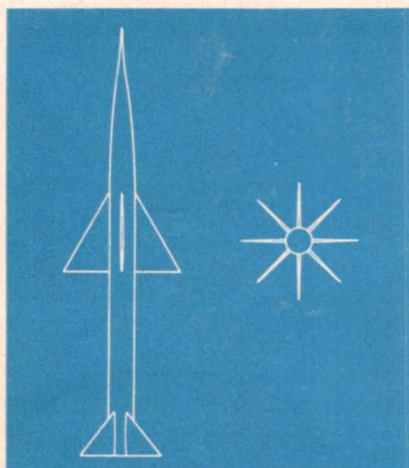
SPECIFICATIONS: Span 28 ft. 7 in.; Length 39 ft. 6 in.; Diameter 4 ft. 6

in.; Gross weight 11,000 lb. Propulsion Allison turbojet J33-A-31, 4600 lb. static thrust at 11,750 rpm.; Launched by solid fuel external booster rocket.

PERFORMANCE: Maximum speed 660 mph; Range 550 mi.

GUIDANCE: Command system.

SPERRY SPARROW AIR-TO-AIR



Anti-aircraft weapon for air defense of the fleet. Several versions: Sparrow 1, XAAM-N-2; Sparrow 2, XAAM-N-3; Sparrow 3, XAAM-N-6. Guidance systems vary. In production. Manufacturer: Sperry Farragut Corp., Bristol, Tenn.

SPECIFICATIONS: Span 2 ft. 3 in.;

Length 8 ft. 3 in.; Diameter 6 in.; Weight 280 lb.; Propulsion solid-propellant rocket.

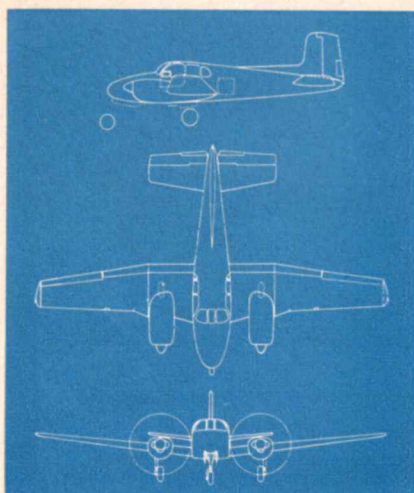
PERFORMANCE: Speed M 3; Range 5 mi.

GUIDANCE: Beam rider, semi-active homing.

MILITARY

BEECH AIRCRAFT CORP.

BEECH C50 TWIN-BONANZA LIGHT TRANSPORT



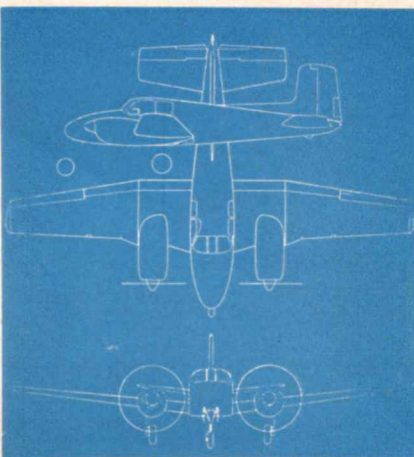
Multi-purpose light transport, the Model 50 features high performance and good load-carrying capacity coupled with outstanding flying characteristics. It is being used by the military services as a trainer, photographic, ambulance or cargo airplane. Manufacturer: Beech Aircraft Corp., Wichita 1, Kans.

SPECIFICATIONS: Span 45 ft. 37/8 in.; Length 31 ft. 6 1/2 in.; Height 11 ft. 4 in.; Empty weight 3928 lb.; Gross weight, 6000 lb.; Wing area 277.06 sq. ft.; Engine (2) Lycoming GO-480-F6 geared, rated at 265 hp

at 3100 rpm at S.L. and 275 hp at 3400 rpm for take-off; Propeller (2) Beech, full feathering with aluminum alloy blades, constant speed, hydraulically controlled; Fuel capacity 134 gal.; Main tire 8.50 x 10; Nose tire 6.50 x 10.

PERFORMANCE: Maximum speed 210 mph at 2,500 ft.; Cruising speed 200 mph at 66.6 percent power at 1000 ft.; Rate of climb 1450 fpm; Service ceiling 20,000 ft.; Maximum range 1100 mi.; Take-off over 50-ft. obstacle 1260 ft.; Land over 50-ft. obstacle 1375 ft.

BEECH L-23B LIAISON



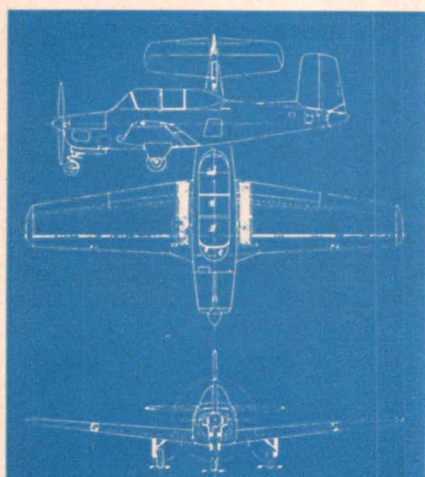
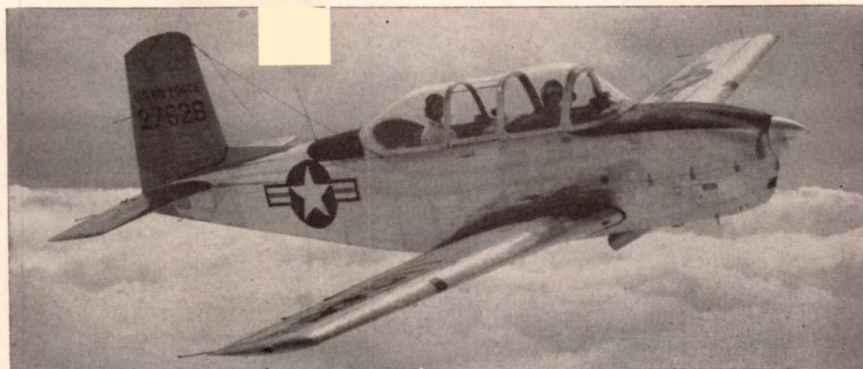
In service as the U. S. Army Ground Forces light personnel transport, the Beechcraft L-23B as designed allows for easy modification to a twin-engine trainer, photographic, ambulance, or cargo airplane. The structure is tested to an 8G flight load factor. The commercial version of this Beechcraft design is the Twin-Bonanza executive transport. Manufacturer: Beech Aircraft Corporation, Wichita, Kan.

SPECIFICATIONS: Span 45 ft. 33/8

in.; Length 31 ft. 6 1/2 in.; Height 11 ft. 4 in.; Gross weight 6000 lb. Engine (2) Lycoming GO-435-C-2, 245 hp each at 3100 rpm at sea level, 260 hp each at 3400 rpm at S.L. Fuel 134 gal.; Six-place.

PERFORMANCE: Maximum speed 202 mph at 245 hp at 3100 rpm at 2500 ft.; Cruising speed 190 mph at 10,000 ft.; Rate-of-climb 1500 rpm; Service ceiling 20,000 ft.; Range 800 miles.

BEECH T34A MENTOR TRAINER



The T-34 Mentor, developed by Beech Aircraft as a private venture, has now been adopted as the official trainer for the U. S. Air Force, the U. S. Navy, and the air services of Canada, Chile, Colombia, El Salvador and Japan. It has won every evaluation contest in which it has participated since the flight of the first prototype on Dec. 2, 1948. Manufacturer: Beech Aircraft Corporation, Wichita, Kan.

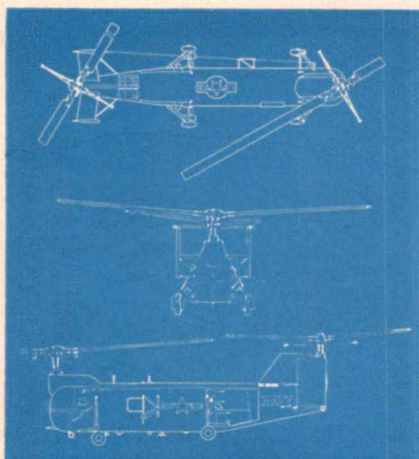
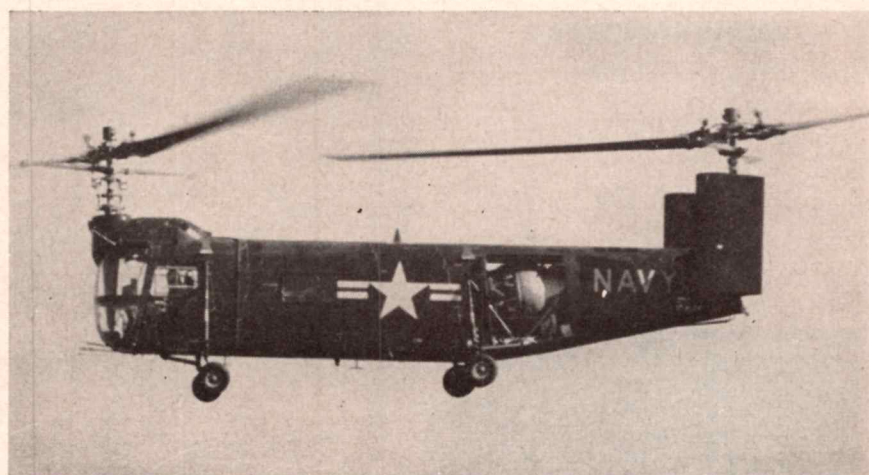
SPECIFICATIONS: Span 32 ft. 10 in.; Length 25 ft. 11 in.; Height 9 ft. 7 in.; Empty weight 2170 lb.; Gross weight 2900 lb.; Engine Continental

O-470-13, 225 hp takeoff; Propeller Beech 278-101 constant speed, 2 blade; Fuel 50 gal.; Electrical system 12-volt; Control surfaces metal-covered; Main gear 6.50 x 8; Nose gear 5.00 x 5; Two-place.

PERFORMANCE: Maximum speed at sea level, 189 mph at 225 hp at 2600 rpm. Cruise speed 171 mph at 135 hp at 2300 rpm at 10,000 ft.; Maximum dive speed 280 mph IAS; Rate-of-climb 1230 fpm; Service ceiling 20,000 ft.; Landing speed, Full flaps 53.5 mph; Landing distance over 50-ft. obstacle 820 ft.; Takeoff distance over 50-ft. obstacle 918 ft.

BELL AIRCRAFT CORP.

BELL HSL-1 ASW COMBAT



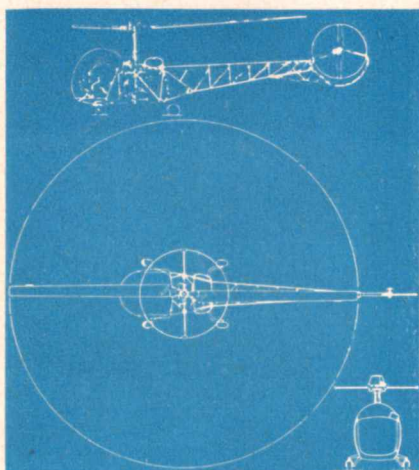
First helicopter specifically designed for anti-submarine warfare, and marks Bell's first departure from the single main rotor configuration. The HSL-1 rotor system has the standard Bell rigid two-blade rotor and automatic stabilizer system. The engine is mounted in conventional position in the aft section of the fuselage. The rotors can be folded rearward, the

rear blades folding for compact carrier storage. Stabilizer fins are provided for directional stability in high speed flight.

SPECIFICATIONS: Main rotor diameter 51 ft. 6 in.; Length 40 ft.; Height 14 ft. 6 in.; Engine Pratt and Whitney R-2800, 1900 hp normal rated; Fuel capacity 425 gal.

PERFORMANCE: All data classified.

BELL H-13G GENERAL PURPOSE

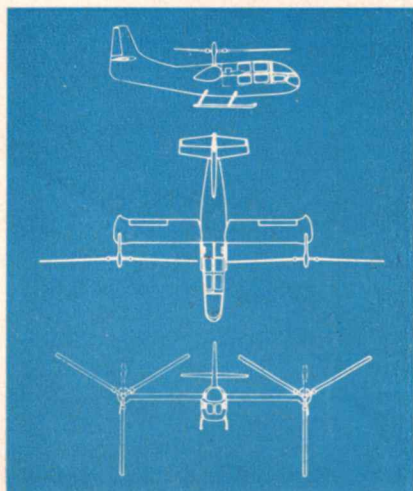


Available as commercial Model 47G. In service with Navy as HTL-6 and U.S. Army as H-13G equipped for rescue, 5-pl. evacuation, 3-pl. liaison, 2-pl. instrument training, 4-pl. assault and light cargo missions. Bell XH-13F model experimental turbine installation, similar to H-13G with engine Continental Turbo Mecca Artouste No. 1. Joint Army-Air Force project now in flight test stage. Manufacturer: Bell Aircraft Corp., Fort Worth, Texas.

SPECIFICATIONS: Main rotor dia. 35 ft. 1 1/2 in.; Anti-torque rotor dia. 5 ft. 9 in.; Length 41 ft. 5 in.; Height 9 ft. 4 in.; Engine Franklin O-335-5, 200 hp at 3100 rpm; Empty weight 1409 lb.; Gross weight 2350 lb.; Overload gross weight 2478 lb.

PERFORMANCE: Maximum speed 100 mph at S.L.; Cruise 77 mph at S.L.; Rate-of-climb design gross weight 800 fpm.; Service ceiling design gross weight 10,900 ft.; Range 215 mi.

BELL XV-3 CONVERTIPLANE



Developed by Bell and the USAF Air Research and Development Command for the U. S. Army, the tilting-rotor type convertiplane is designed to combine the preferred features of the helicopter and the airplane. Three-bladed combination rotor-propellers are mounted near the tips of a stubby fixed wing, which operate as conventional lifting rotors during take-offs, landings and low speed flight. Conversion can be completed in 10 to 15 seconds. As a helicopter

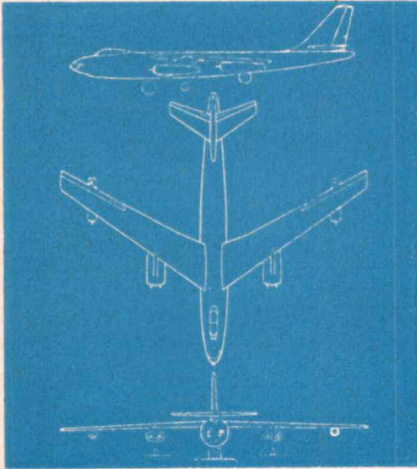
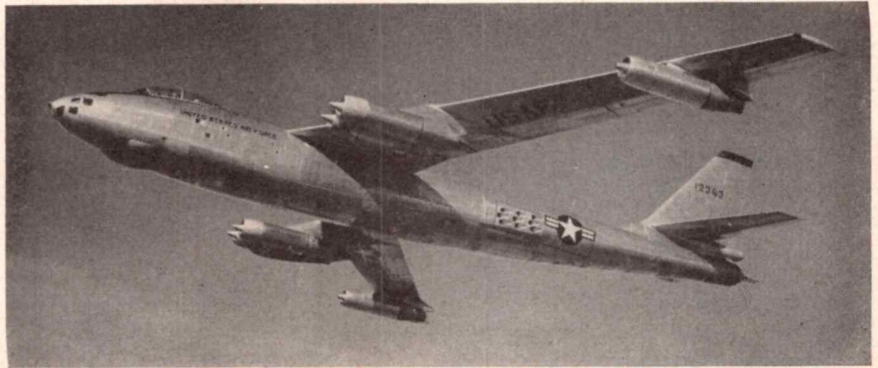
capable of hovering, moving forward, backward or sideward, making maneuvering and landings in confined areas possible even under gusty wind conditions. As an airplane, the XV-3 is a medium-range aircraft.

SPECIFICATIONS: Span 30 ft.; Height 13 ft.; Length 30 ft.; Engine (1) Pratt & Whitney; Skid landing gear.

PERFORMANCE: Speed more than 175 mph; Range—medium.

BOEING AIRPLANE CO.

BOEING B-47E STRATOJET MEDIUM BOMBER



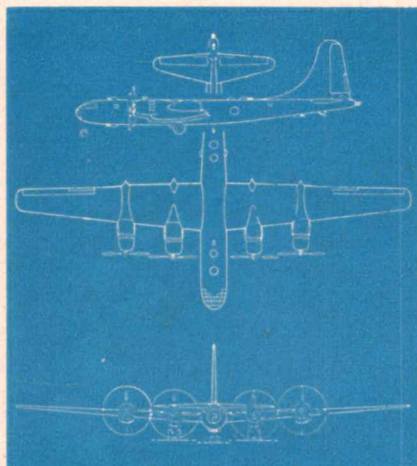
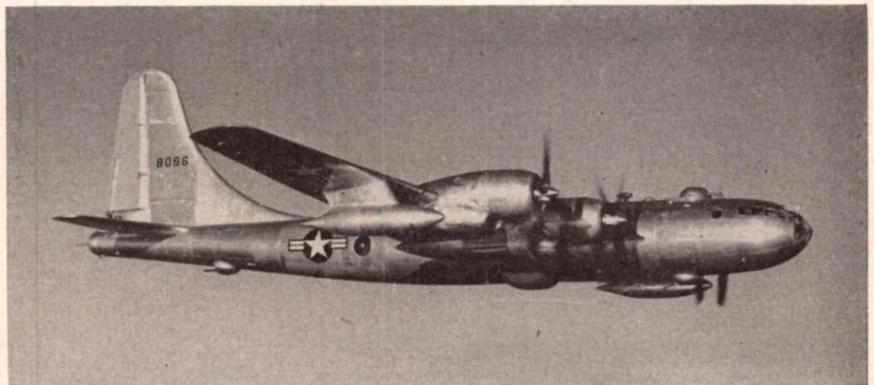
The Boeing B-47E is in vast quantity production at wide variety of sub-contractors plants throughout the nation. Holds transcontinental speed record of 2289 miles in 3 hr. 46 min. at average of 607.8 mph. Design began in Sept. 1945 and prototype made first flight Dec. 17, 1947. First production model B-47A completed at Wichita plant Mar. 1, 1950. First Douglas-built B-47B flew Dec. 12, 1952 at Tulsa, Okla. plant. First Lockheed-built B-47B flew Dec. 16, 1952 at Marietta, Ga. plant. Present production model first flew Jan. 1, 1953.

More than 1000 in service. RB-47E version has extended nose for camera installations. Manufacturer: Boeing Airplane Company, Wichita, Kan.

SPECIFICATIONS: Span 116 ft.; Length 106 ft. 8 in.; Height 27 ft. 11 in. Gross Weight 185,000 lb. Engine (6) General Electric J47-GE-23, 6000 lb. thrust ea. Bomb load more than 20,000 lb.; Armament (2) 20mm cannon; Crew 3.

PERFORMANCE: Maximum speed more than 600 mph; Service ceiling more than 40,000 ft.; Range more than 3000 mi.

BOEING B-50D SUPERFORTRESS MEDIUM BOMBER



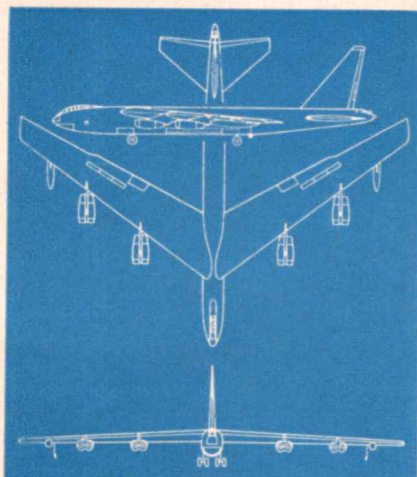
Deliveries began Nov. 13, 1949. Photo-reconnaissance versions include E, F and G models. TB-50H is navigator-bombardier trainer version. Flew around world non stop. Manufacturer: Boeing Airplane Company, Seattle, Wash.

SPECIFICATIONS: Span 141 ft. 3 in.; Length 99 ft.; Height 32 ft. 8 in. Empty weight 80,000 lb.; Gross weight 164,500 lb. normal; Maximum gross weight 173,000 lb. Engine (4) Pratt & Whitney R-4360-35 Wasp

Major, 3500 hp takeoff, 2650 hp normal rated; Propellers (4) Curtiss Electric, four-blade, fully reversible, full feathering. Bomb load 20,000 lb. normal, 28,000 lb. with external bombs. Armament 13—.50-cal. machine guns in five turrets. Crew 10.

PERFORMANCE: Maximum speed more than 400 mph. Cruising speed 300 mph. Service ceiling 40,000 ft. Range 4,000 miles with full load, 1400 gal. fuel in external fuel tanks, equipped for in-flight refueling.

BOEING B-52A STRATOFORTRESS HEAVY BOMBER

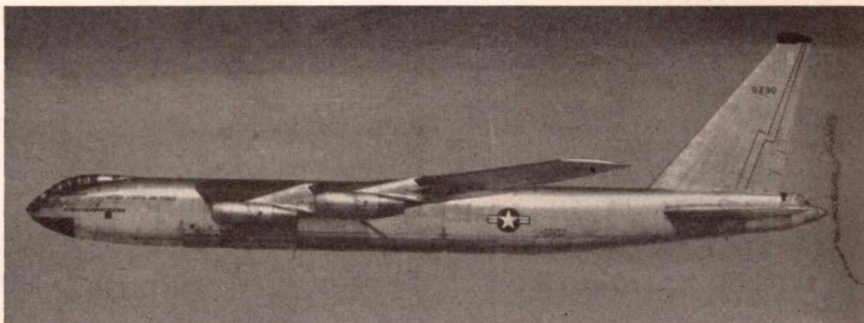


The B-52A is the largest and heaviest military airplane ever built. Production order signed well in advance of YB-52 first flight on April 15, 1952. XB-52 flew month later, reversing usual order. Production B-52A models feature conventional transport-type flight deck and windows. RB-52A photo-reconnaissance version is scheduled for production, in addition to standard bomber version. Manufacturer: Boeing Airplane Com-

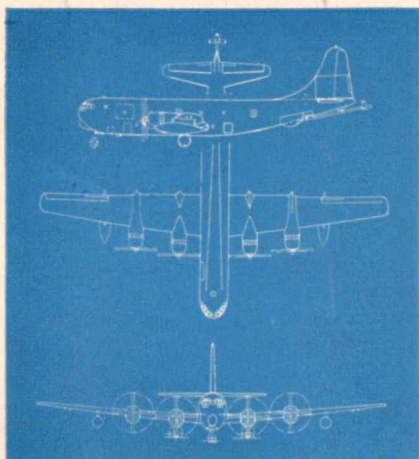
pany, Seattle, Wash.

SPECIFICATIONS: Span 185 ft.; Length 156 ft.; Height 48 ft.; Empty weight about 175,000 lb.; Gross weight more than 350,000 lb.; Engine (8) Pratt & Whitney J57-P1, rated in the 10,000 lb. thrust class. Armament (4) 50 cal. Crew 6.

PERFORMANCE: Maximum speed more than 600 mph; Service ceiling more than 50,000 ft. Range over 6000 miles.



BOEING KC-97G STRATOFREIGHTER CARGO TRANSPORT

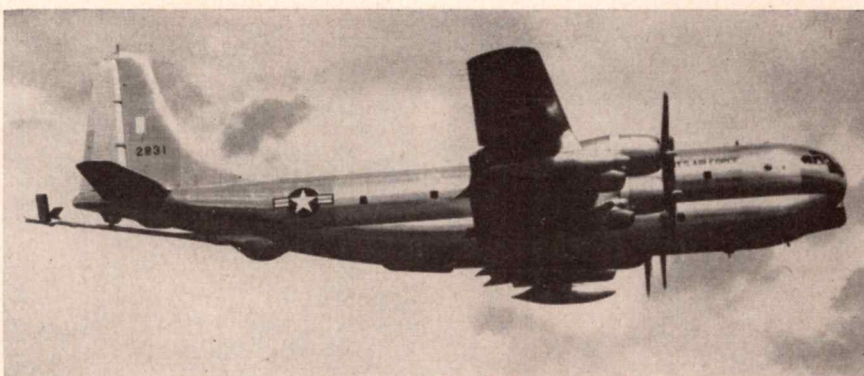


Used as convertible tanker-cargo-passenger transport. As KC-97 it is equipped with Boeing Flying Boom aerial refueling equipment to serve as flying tanker for fighter and bomber refueling. Cargo version carries a maximum of 68,500 lb. of heavy cargo such as jeeps, trucks and artillery. Passenger version accommodates 130 men, ambulance version up to 79 litter patients, medical attendants and supplies. New KC-97G is in volume production for Strategic Air Command. Droppable fuel tanks, 700-gal. ea., extend range. Manufacturer: Boeing Airplane Company,

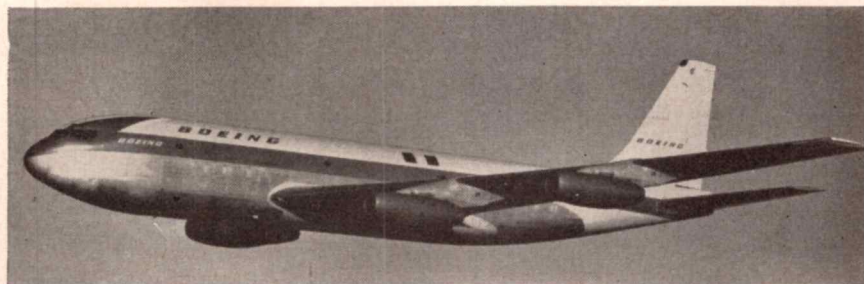
Seattle, Wash.

SPECIFICATIONS: Span 141 ft. 3 in.; Length 110 ft. 4 in.; Height 38 ft. 3 in.; Empty weight 85,400 lb.; Gross weight 153,000 lb. normal; Maximum gross 175,000 lb. Engine (4) Pratt & Whitney R-4360-59 Wasp Major, 3500 hp takeoff, 2650 hp normal rated. Propellers (4) Hamilton Standard four-blade, constant speed, full feathering, reverse thrust 16 ft. 6 in. dia.; Fuel 7790 gal.; Crew 5.

PERFORMANCE: Maximum speed 375 mph; Cruising speed more than 300 mph. Service ceiling more than 35,000 ft. Range 4300 mi.



BOEING 707 JET TRANSPORT

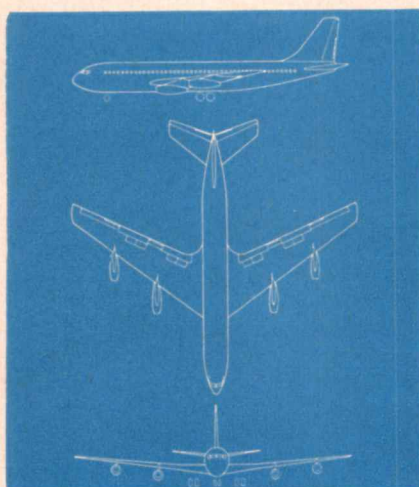


In 1952 Boeing announced it was engaged in a prototype jet transport project. July 15, 1954, the 707 made its first flight from the Renton Municipal Airport to Seattle, flight lasting one hour twenty-four minutes. Two days later the plane flew at altitudes above 42,000 feet at speeds above 550 mph during its test program. In August 1954 the Air Force announced it was purchasing an undisclosed number of an advanced design of the plane. The advance design KC-135 is now in production. Manufacturer: Boeing Airplane Company, Renton,

Washington.

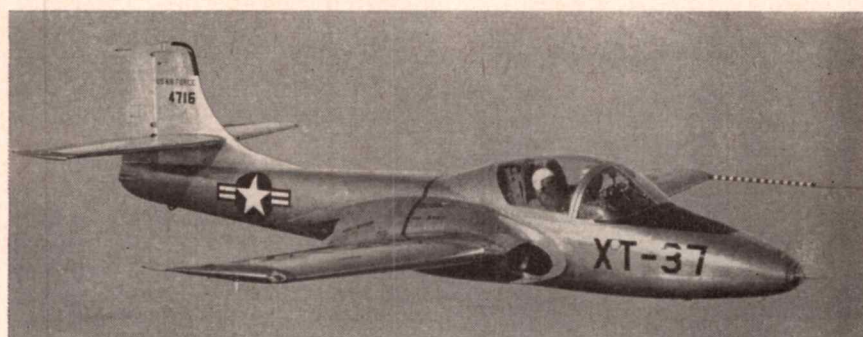
SPECIFICATIONS: Span 130 ft.; Length 128 ft.; Height 38 ft., 3 in.; Wing area 2400 sq. ft.; Empty weight 88,890 lb.; Gross weight 190,000 lb.; Engine (4) Pratt & Whitney JT3 turbojet engines rated in the 10,000 lb. class; Fuel 13,680 gal.

PERFORMANCE: Maximum speed over 550 mph at 42,000 ft.; Cruising speed 500 mph at 35,000 ft.; Takeoff distance over 50 ft. obstacle 6400 ft. at 180,000 lb. weight; Stalling speed 136 mph at 190,000 lb., 116 mph at 160,000 lb.; Range 2300 mi.



CESSNA AIRCRAFT CO.

CESSNA T-37 JET TRAINER



3-View
Not Available

Successfully flown in the latter part of 1954, the T-37 is Cessna's first jet airplane. Used as a side-by-side jet trainer to introduce pilots to jet aircraft in an early phase of the training cycle, it is designed for both slow and high speed as well as high altitude characteristics. Manufacturer:

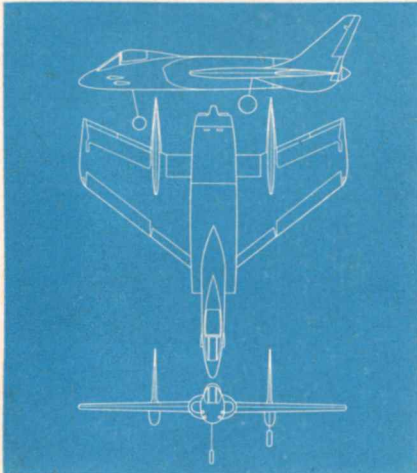
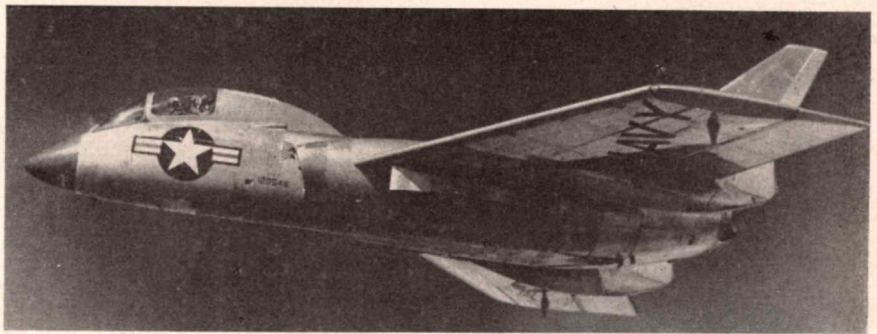
Cessna Aircraft Co., Wichita, Kans.

SPECIFICATIONS: Span 33 ft.; Length 27 ft. 1 in.; Height 9 ft. 10 in. Engine (2) Continental Turbomeca Marbore 352 turbojet, 900 lb. static thrust. Design gross weight 5600 lb.

PERFORMANCE: Maximum speed over 350 mph. Range over 800 mi.

CHANCE VOUGHT AIRCRAFT, INC.

CHANCE VOUGHT F7U-3 CUTLASS INTERCEPTOR



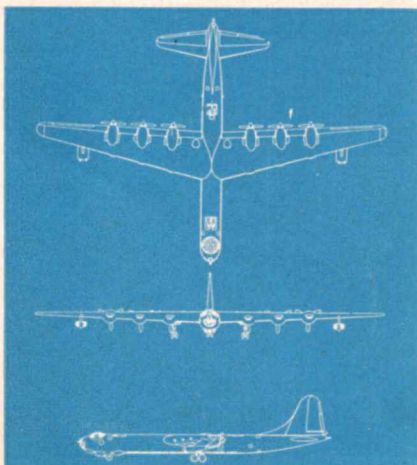
Navy fighter is tail-less type with vertical surfaces attached to wing trailing edge. Leading edge wing slats replace conventional landing flaps for low stalling speeds. An attack version of the F7U-3, the A2U-1 started production late in 1954 but was subsequently halted. Basically the same airframe as the F7U-3 but has added range and armament protection changes and provisions for carrying a more varied bomb load. Cutlass has dual power control hydraulic system rather than a single system with a separate manual control system. Each system is completely indepen-

dent of the other. Manufacturer, Chance Vought Aircraft, Inc., Dallas, Texas.

SPECIFICATIONS: Span 39 ft. 8-6/10 in.; Length 44 ft. 3-5/10 in.; Height 14 ft. 7-5/10 in. Empty weight 18,210 lb.; Gross weight 27,340 lb.; Engine (2) Westinghouse J46-WE-2, 4800 lb. thrust unaugmented, 8200 lb. thrust with afterburners; Main tire 30 x 7.7; Nose tire 18 x 5.5; Crew 1.

PERFORMANCE: Maximum speed over 650 mph; Rate of climb about 13,000 fpm with afterburner; Service ceiling about 40,000 ft.

CONVAIR B-36J HEAVY BOMBER



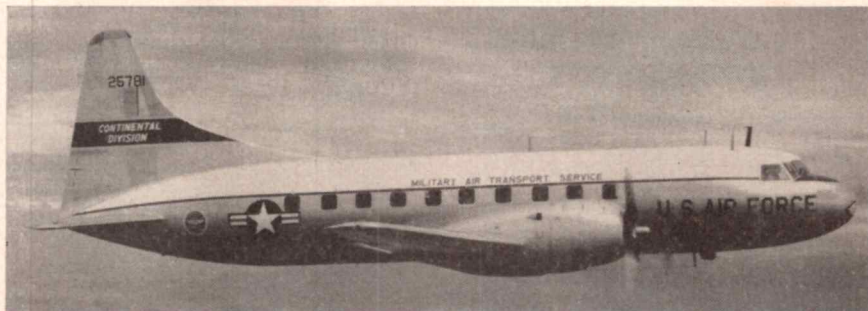
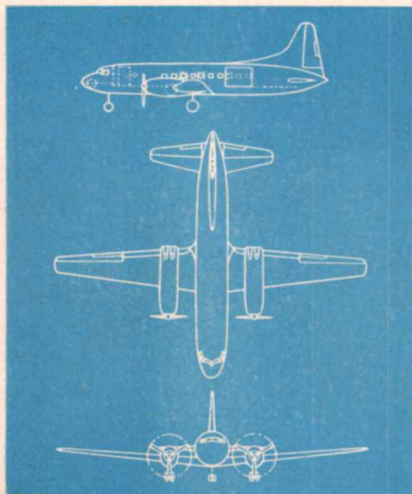
B-36J is standard Strategic Air Command heavy bomber. SAC's B-36 and RB-36 wings are now fully equipped. Last B-36 off assembly line was delivered August 14, 1954. Some RB-36's are periodically rotated through Convair-Fort Worth for inspection, maintenance, and overhaul. Gun-laying radar and K system for bombing and navigation. Manufacturer: Convair, Division of General Dynamics Corp., San Diego, Calif.

SPECIFICATIONS: Span 230 ft.; Length 162 ft. 1 in.; Height 46 ft. 9 in.; Empty weight 145,000 lb.; Gross weight 326,000 lb.; Maximum gross

weight over 400,000 lb.; Area wing 4772 sq. ft.; aileron 247.8 sq. ft.; flap 517.7 sq. ft.; fin 325.2 sq. ft.; rudder 217.3 sq. ft.; stabilizer 505.9 sq. ft.; elevator 472.9 sq. ft.; Engine (6) Pratt & Whitney R-4360-53, 3800 hp; take-off, (4) General Electric J47-19 turbojet, 5200 lb. thrust; Propeller (6) Curtiss Electric, 3-blade, reversible pitch, 19 ft. dia.; Main gear 56 x 16; Nose gear 50 x 17:00-20; Armament 16-20 mm cannon; Fuel 21,116 gal.

PERFORMANCE: Maximum speed over 435 mph; Landing speed about 100 mph; Service ceiling more than 45,000 ft.; Range 10,000 miles.

CONVAIR C-131A SAMARITAN TRANSPORT



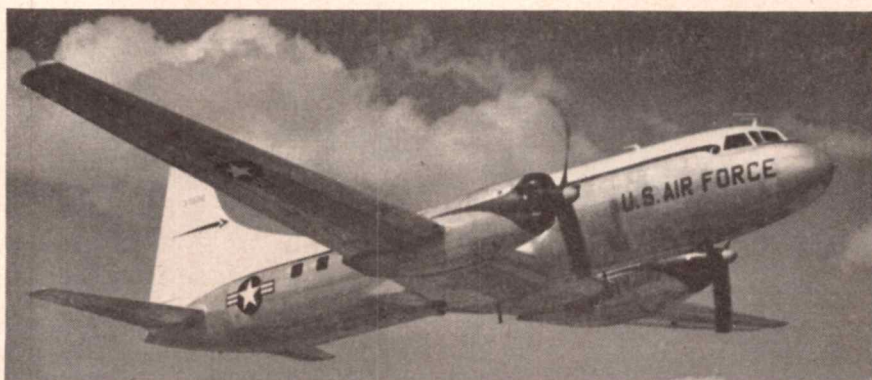
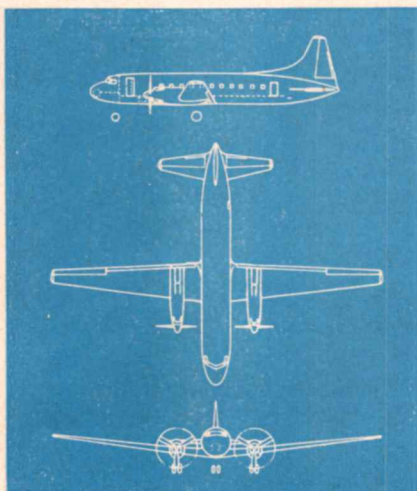
The C-131A air-evacuation transports were delivered to the Air Force during 1954 for operation by the Military Air Transport Service. Based on design of the Convair-Liner 240, the C-131A will carry passengers in rearward facing seats or litters in various combinations. Manufacturer: Convair, Division of General Dynamics Corp., San Diego, Calif.

SPECIFICATIONS: Span 91 ft. 9 in.; Length 74 ft. 8 in.; Height 27 ft. 3 in.; Empty weight 29,000 lb.; Gross weight 43,575 lb.; Areas wing 817 sq. ft.; aileron 24.52 sq. ft.; flap 140

sq. ft.; fin 125 sq. ft.; stabilizer 233 sq. ft. Engine (2) Pratt & Whitney R-2800-99-W 2500 hp each, 1360 hp takeoff; Fuel capacity 1550 gal.; Propeller Hamilton-Standard, 3-bladed, full feathering and reversible; Main tire 34 x 9.9; Nose tire 26 x 6.6.

PERFORMANCE: Maximum speed 313 mph at 1700 hp at 14,500 ft.; Cruising speed 285 mph at 1360 hp at 20,000 ft.; Landing speed 92 mph; Rate of climb 1410 fpm at S.L.; Service ceiling 24,500 ft.; Range with maximum payload 875 mi.; Range with maximum fuel 1209 mi.

CONVAIR C-131B (-C, -D) TRANSPORT



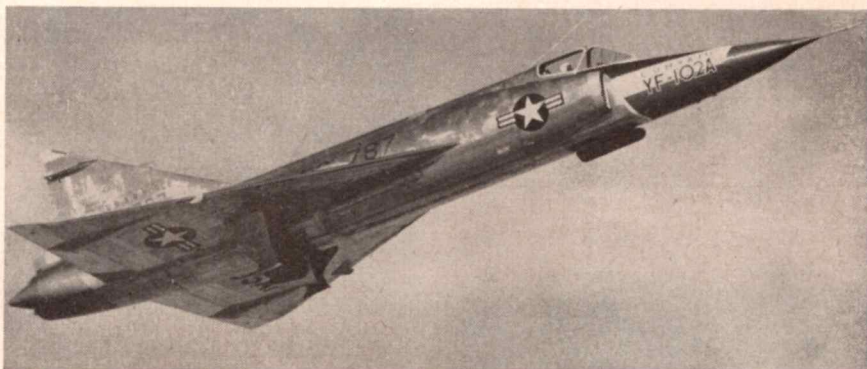
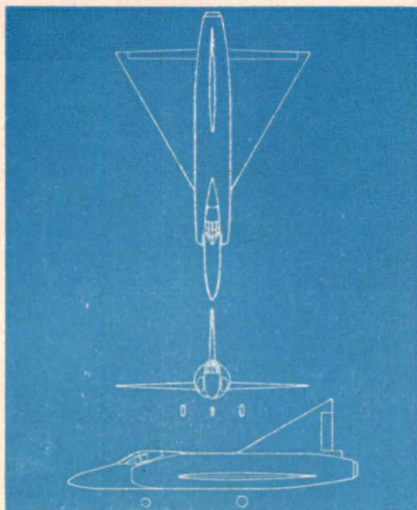
Basic performance and specification data below are for the C-131B. Differences in the YC-131C and C-131D are noted in parenthesis. The C-131B's were delivered to the Air Force during 1954 as test planes for electronic equipment. The planes can be converted quickly to transport service. The YC-131C's are being assigned to Military Air Transport Service for further development. Manufacturer: Convair, Division of General Dynamics Corp., San Diego, Calif.

SPECIFICATIONS: Span 105 ft. 4 in.; Length 79 ft. 2 in.; Height 28 ft. 2 in. (-C, 29 ft. 2 in.; -D, 28 ft. 1.64 in.); Empty weight 29,248 lb. (-D, 29,600 lb.); Gross weight 47,000 lb. (-D, 46,500 lb.); Areas wing 920 sq. ft.; aileron 43.8 sq. ft.; flap

182.5 sq. ft.; fin 86.2 sq. ft.; rudder 41 sq. ft.; stabilizer 175.4 sq. ft.; elevator 58.6 sq. ft.; Engine (2) Pratt & Whitney R-2800-99W-16, 2500 hp. ea. (-C, (2) Allison YT-56-A-3 turbine propeller 3325 hp.; -D (2) Pratt & Whitney R-2800-CB-16, 2400 hp ea.); Fuel capacity 1730 gal.; Propeller Hamilton Standard, three-bladed, hydromatic (-C, Aero-products 3-bladed reversible).

PERFORMANCE: Maximum speed 294 mph at 1570 hp at 2300 rpm at 16,000 ft.; Cruising speed 284 mph at 1200 hp at 2000 rpm at 20,000 ft.; Landing speed 103.6 mph; Rate of climb 1410 fpm at S.L.; Service ceiling 24,500 ft. (-C, 36,300 ft.); Range with maximum payload 518 mi.; Range with maximum fuel load 1808 mi.

CONVAIR F102A INTERCEPTOR

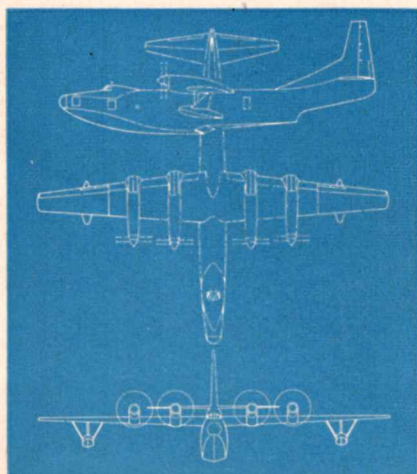


Big, supersonic all weather delta-wing interceptor is designed for either piloted or pilotless flight, uses Hughes guidance equipment and mounts Hughes Falcon missile. Prototype destroyed in crash. First production model built in 117 working days in 1954. First flight made Dec. 20, 1954. Flew supersonically next day in level flight. Manufacturer:

Convair, Division of General Dynamics Corporation, San Diego, Calif.

SPECIFICATIONS: Span 38 ft. 1-6/10 in.; Length 68 ft. 3-3/10 in.; Height 18 ft. 2 in.; Gross weight 25,600 lb.; Engine Pratt & Whitney J57-P-11, 15,000 lb. thrust. Crew 1. **PERFORMANCE** Estimated maximum speed Mach 1.5; Service ceiling 60,000 ft.; Range 600 miles.

CONVAIR R3Y-2 TRADEWIND CARGO FLYING BOAT



First U.S. multi-turboprop airplane, the huge flying boat made initial flight April, 1950 and has remained aloft more than eight hours to establish turboprop endurance record. Design features high length-beam ratio hull for low drag in flight, improved water-handling characteristics. The R3Y-2 is now in production and scheduled for trans-Pacific service this year. Manufacturer: Convair, Division of General Dynamics Corporation, San Diego, Calif.

SPECIFICATIONS: Span 145 ft. 9

in.; Length 139 ft. 8 in.; Height 51 ft. 5 in.; Area wing 2100 sq. ft.; aileron 116.2 sq. ft.; flap 278 sq. ft.; fin 183.7 sq. ft.; rudder 116.7 sq. ft.; stabilizer 251 sq. ft.; elevator 133.1 sq. ft.; Empty weight 80,000 lb.; Gross weight 160,000 lb.; Engine (4) Allison T40, 5500 hp at takeoff. Propeller Aeroproducts, 3 blade, 15 ft., contra-rotating.

PERFORMANCE: Maximum speed 386 mph at 25,000 ft.; Cruising speed 300 mph; Rate-of-climb 2500 fpm; Range 4500 mi.

CONVAIR T-29C TRAINER

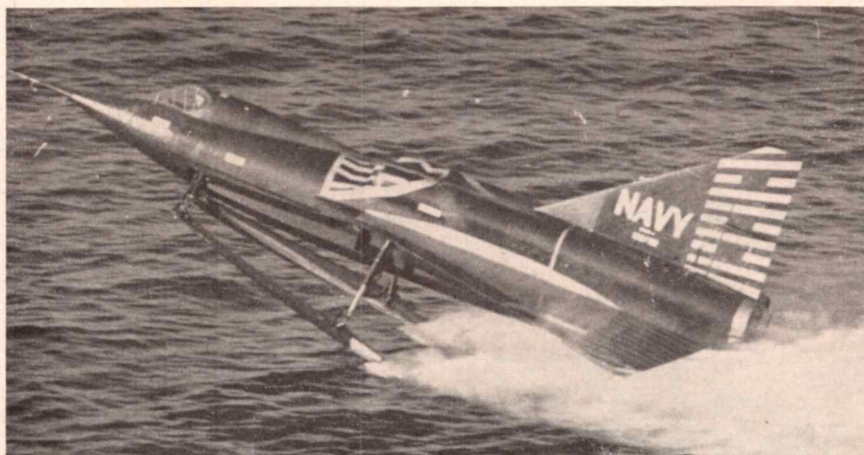
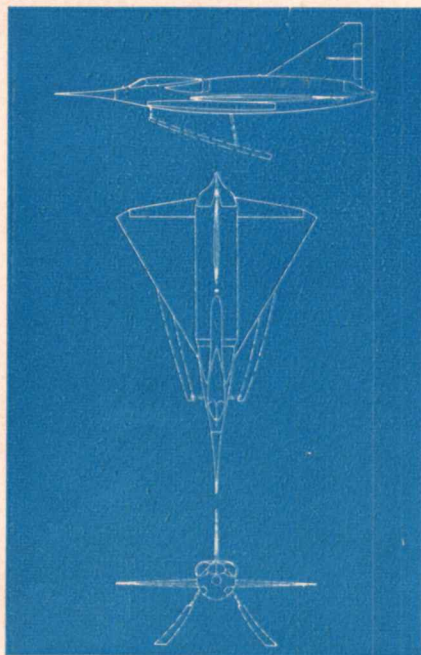


3-View
Not Available

Flying classroom for navigators and bombardiers, the T-29C accommodates seven students and instructors. Navigation training version is equipped with 14 stations, each with table, instrument panel, oxygen, etc. Radar Training equipment provides for three students with instructors. Manufacturer: Convair, Division of General Dynamics Corporation, San Diego, Calif.
SPECIFICATIONS: Span 91 ft. 9 in.; Length 74 ft. 8 in.; Height 27 ft. 3 in.; Empty weight 29,000 lb.; Gross weight 43,575 lb.; Area wing 817 sq.

ft.; aileron 24.52 sq. ft.; flap 140 sq. ft.; fin 125 sq. ft.; stabilizer 233 sq. ft.; Engine (2) Pratt & Whitney R-2800-99W, 2500 hp; Propeller (2) Hamilton-Standard, 3 blade, full feathering and reversible; Fuel 1550 gal.; Main tires 34 x 9.9; Crew 4.
PERFORMANCE: Maximum speed 300 mph at 1700 hp at 14,500 ft.; Cruise speed 284 mph at 1360 hp at 20,000 ft.; Landing speed 91 mph; Rate of climb 1370 fpm at S. L. Service ceiling 24,000 ft.; Single engine ceiling 7500 ft.

CONVAIR XF2Y-1 SEA DART FIGHTER SEAPLANE

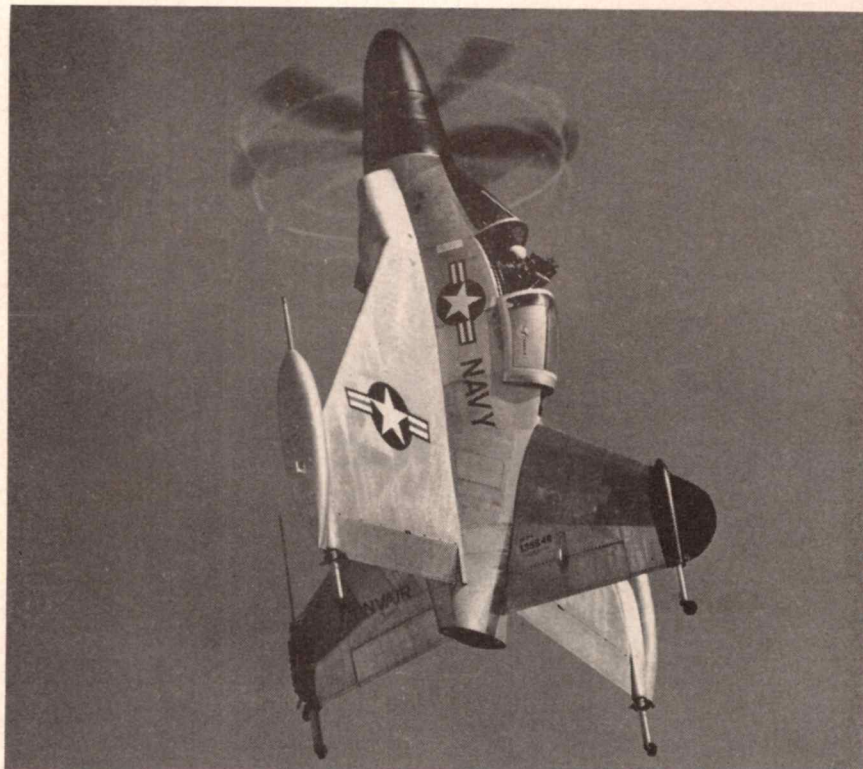


New Sea Dart flying boat fighter utilizes hydro-ski retractable undercarriage to provide planing surface for water operation. After hydro-ski retraction, resulting airplane is high-speed, delta-wing comparable in performance to landbased fighters. Navy, NACA, Convair, Edo and All-American Airways cooperated in hydro-ski development, included flight tests of Grumman Goose, North American SNJ and Piper air-

planes. Initial production quantity now under construction at San Diego factory. Sea Dart was flown at supersonic speed in 1954. Manufacturer: Convair, Division of General Dynamics Corporation, San Diego, Calif.
SPECIFICATIONS: Span 30 ft. 6 in.; Length 41 ft. 2 in.; Height (skis extended) 21 ft. 1 in. Gross weight 22,000 lb. Engine (2) Westinghouse J34-WE-42, 3400 lb. static thrust.
PERFORMANCE: All data classified.

**CONVAIR XFY-1
POGO
VERTICAL TAKEOFF**

**3-View
Classified**



The XFY-1 made more than 350 flights during 1954 at Moffett Naval Air Station, Calif., and Brown Field (near San Diego) Calif. Flown by J. F. Coleman, the XFY-1 made its first transition to complete horizontal flight Nov. 2, 1954 at Brown Field. Early flights were made in a tethering rig built into an airship hangar at Moffett. Manufacturer: Convair, Di-

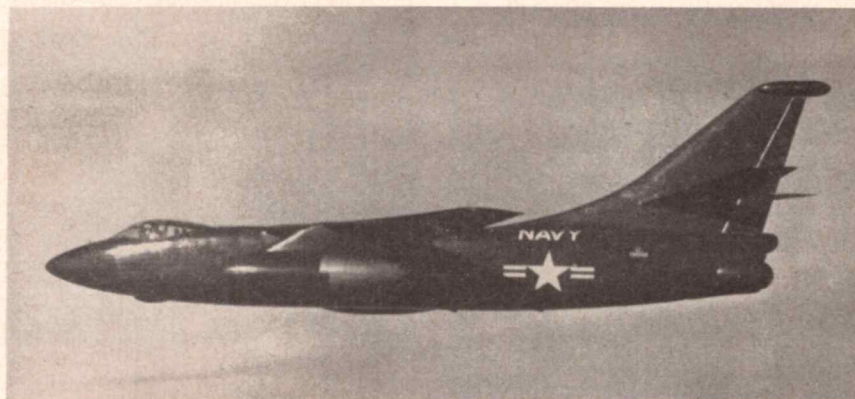
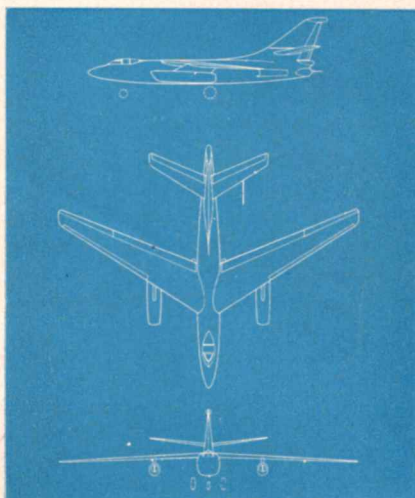
vision of General Dynamics Corp., San Diego, Calif.

SPECIFICATIONS: Span 25 ft. 8 in.; Length 34 ft. 10 in.; Height 23 ft. 11 in.; Area wing 355 sq. ft.; fin 176 sq. ft.; rudder 20 sq. ft.; elevator 36 sq. ft.; Engine Allison T40-A-14; Propeller Aeroproducts 16-ft. contra-rotating, six-bladed.

PERFORMANCE: All data classified.

DOUGLAS AIRCRAFT CO., INC.

**SKYWARRIOR
CARRIER ATTACK
DOUGLAS A3D-1**



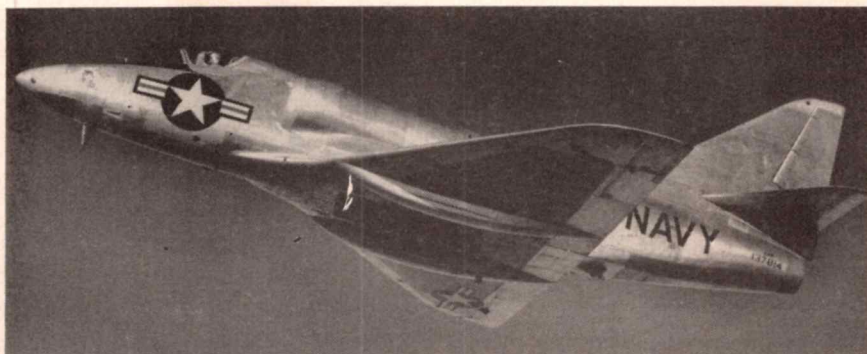
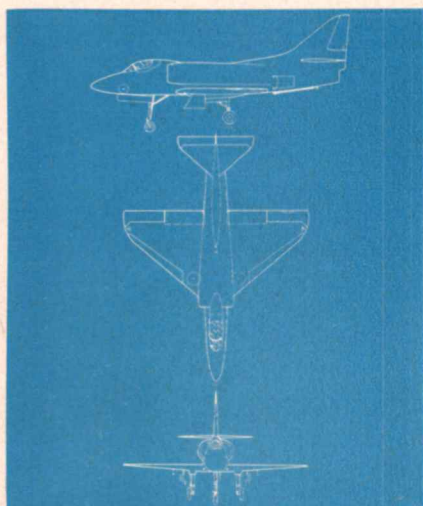
The A3D-1 is designed for carrier operation. First flown on Sept. 16, 1953. It can also be used at low level for mine laying or can be adapted aboard a carrier for photo reconnaissance. It has an internal bomb bay capable of holding the largest type bombs, torpedoes or other munitions used aboard Navy carriers. The Skywarrior entered production in 1953.

Manufacturer: Douglas Aircraft Co., Santa Monica, Calif.

SPECIFICATION: Span 72 ft. 6 in.; Length 75 ft. 10 in.; Height 23 ft. 9 in.; Gross weight 70,000 lb. Engine (2) P&W J57 9500 lb. thrust.

PERFORMANCE: Maximum speed more than 650 mph; Ceiling more than 45,000 ft.; Range more than 1500 miles.

**DOUGLAS A4D
SKYHAWK
CARRIER ATTACK**



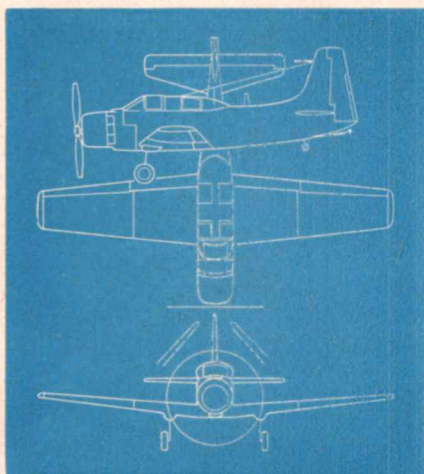
The A4D bantam bomber, designed for simplified mass production, is the smallest and lightest U. S. jet combat plane ever built. The first of these Navy atom bombers was completely built 18 months after the beginning of design. First flight was June 22, 1954. Superior in performance to many jet fighters, the A4D is so small

it is built without the folding wings traditional in Navy carrier-based planes. Manufacturer: Douglas Aircraft Company, El Segundo, Calif.

SPECIFICATIONS: - Span 27 ft.; Length 38 ft.; Height 15 ft. Engine Wright J65 Sapphire with normal rated thrust 6400 lb.

PERFORMANCE: All data classified.

**DOUGLAS AD-5
SKYRAIDER
CARRIER ATTACK**



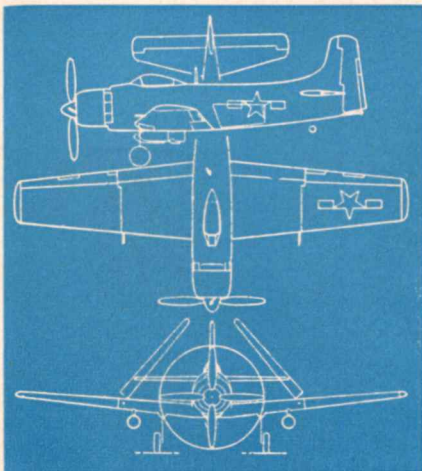
The AD-5 is an extremely different version of the AD Skyraider series, designed to perform more than a dozen different jobs. Can carry bomb load of 10,500 lb. A multi-placed plane, the AD-5 went into production in July 1953. It is being produced in three models—the AD-5 day attack which can be fitted with conversion kits for specific tasks not ordinarily assigned an attack type aircraft, AD-5N (night operations), and AD-5W (special search equipment). Conversions can turn the long range bomber into a 12-place transport, one-ton cargo plane, six place VIP transport or four-litter ambul-

ance. Manufacturer: Douglas Aircraft Company, Inc., El Segundo, Calif.

SPECIFICATIONS: Span 50 ft. 1/4 in.; Length 40 ft. 5/8 in.; Height 15 ft. 9 5/8 in.; Empty weight 12,313 lb.; Gross weight 18,799 lb.; Areas wing 400 sq. ft.; aileron 52 sq. ft.; flap 32 sq. ft.; fin 33 sq. ft.; rudder 22 sq. ft.; stabilizer 43 sq. ft.; elevator 44 sq. ft.; Engine Wright R-3350-26WA, 2700 hp; Propeller Aeroprop 4 blade; Main tire Goodyear 32 x 8.8; Armament four 20mm cannon plus external.

PERFORMANCE: (Estimated) Maximum speed 365 mph; Cruising speed 300 mph; Combat radius 500 miles.

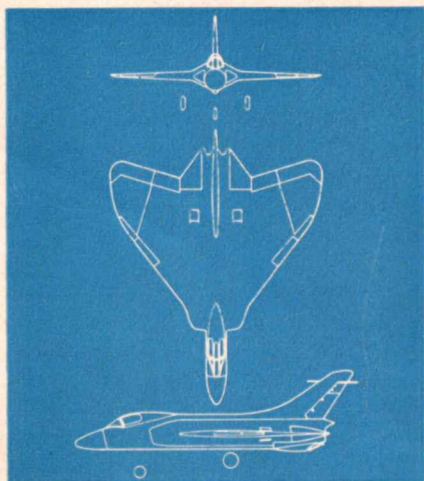
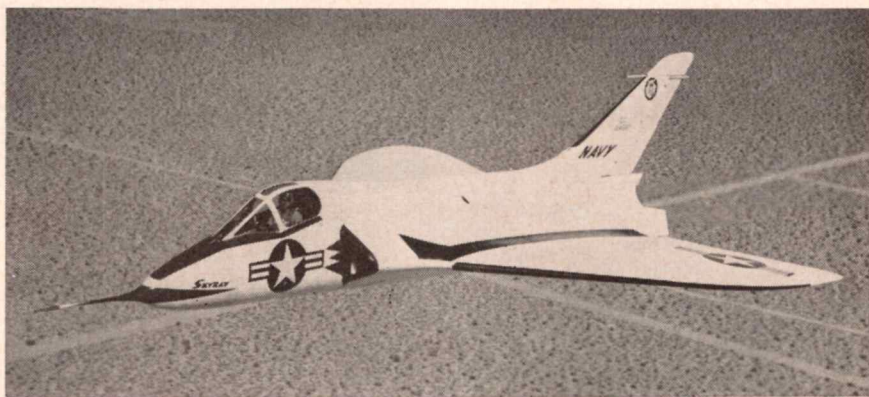
**DOUGLAS AD-6
SKYRAIDER
CARRIER ATTACK**



One of the series of AD Skyraiders produced in quantity since late 1945, the AD-6 went into production May 1, 1952. It is the current version of the single-place plane which regularly carried 8000 and 9000 lb. bomb loads in Korea although it was originally designed for 1000 lb. loads. An AD-4 set a new world record for loads carried by a single-engine aircraft on May 21, 1953, carrying a bomb load of 10,500 lbs. and a useful load of 14,941 lbs. Manufacturer: Douglas Air-

craft Company, El Segundo, Calif.
SPECIFICATIONS: Span 50 ft. 1/4 in.; Length 38 ft. 10 1/2 in.; Height 15 ft. 8 in.; Empty weight 11,968 lb.; Gross weight 18,106 lb.; Overload gross weight 25,000 lb.; Areas wing 400 sq. ft.; aileron 54 sq. ft.; flap 32 sq. ft.; fin 15 sq. ft.; rudder 20 sq. ft.; stabilizer 43 sq. ft.; elevator 44 sq. ft.; Engine Wright R-3350-26WA 2700 hp; Propeller 4 blade Aeroprop; Main tire Goodyear 32 x 8.8.
PERFORMANCE: All data classified.

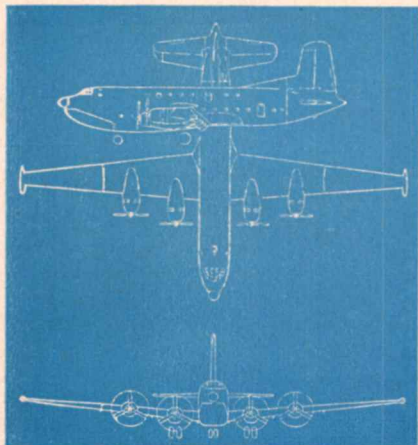
**DOUGLAS F4D-1
SKYRAY
CARRIER INTERCEPTOR**



The F4D is a supersonic fighter capable of climbing extremely fast to ultra-high altitudes. On Oct 3, 1953, the XF4D regained the world's official speed record for the U. S. when the late Lt. Cmdr. James B. Verdin, USN, averaged 753.4 mph. The record-breaking XF4D had a J40 engine with afterburner. First flown Jan. 23, 1951, the plane went into

production for the Navy in 1953. Manufacturer: Douglas Aircraft Company, Inc., El Segundo, Calif.
SPECIFICATIONS: Span 33 ft. 6 in.; Length 45 ft. 8.3 in.; Height 13 ft.; Gross weight 20,000 lb.
PERFORMANCE: Supersonic speed with 15-18,000 fpm rate-of-climb. Endurance limited to 45 min. Can reach 50,000 ft. in less than 10 min.

**DOUGLAS YC-124B
GLOBEMASTER II
CARGO**

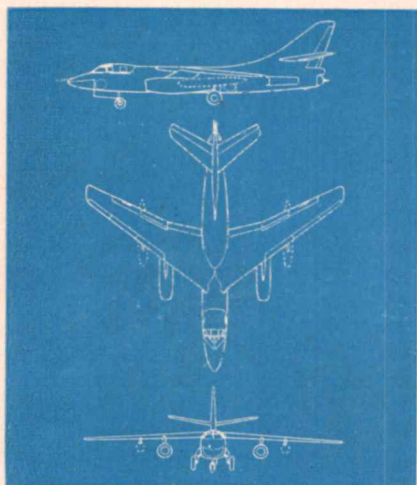
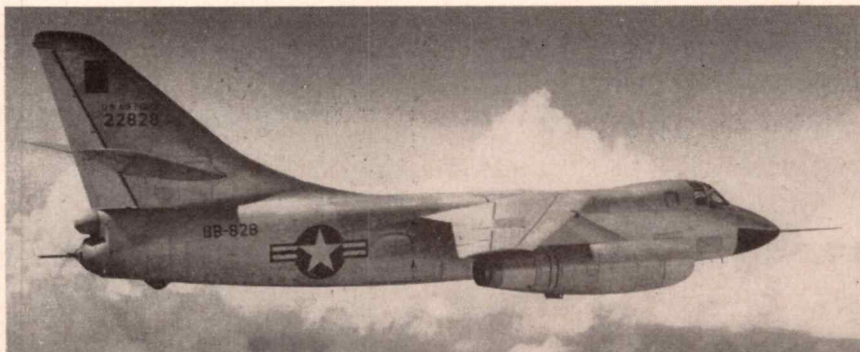


Plane is development project to provide direct comparison of piston and turboprop cargo operation. New transport includes enlarged and strengthened vertical tail and redesigned horizontal tail with new airfoil. Cabin pressurization is added for crew comfort due to increased cruising altitude needed for efficient turboprop operation. Pneumatic system provides engine starting, pressurization and auxiliary power. Manufacturer: Douglas Aircraft Company, Inc., El Segundo, Calif.

SPECIFICATIONS: Span 174 ft. 1 in.; Length 129 ft. 7 in.; Height 51 ft. 3 in.; Empty weight 96,269 lb.; Gross weight 200,000 lb.; Wing area 2506 sq. ft.; Engine (4) Pratt & Whitney YT34-P-1 turboprop, 5500 hp at takeoff.

PERFORMANCE: Estimated maximum speed 348 mph at 30,000 ft.; Cruising speed 308 mph at 22,500 ft.; Stalling speed 98 mph; Rate-of-climb 1100 fpm; Service ceiling full gross 30,000 ft.; Range 4500 mi.

**DOUGLAS RB-66 (B-66)
LIGHT
RECONNAISSANCE
(BOMBER)**



The RB-66 is a swept-wing, twin-jet bomber re-engineered from the basic design of the Douglas A3D. Its two Allison J-71 engines are slung in pods beneath its high wings. First flight, June 28, 1954. This model was designed specifically for photo reconnaissance and is a running mate for the B-66, the bomber version also in production at the Douglas Long Beach plant. The XA3D-1 was first flown Oct. 28, 1952 and at that time was the most powerful carrier based design to go into production. This model had two Pratt and Whitney

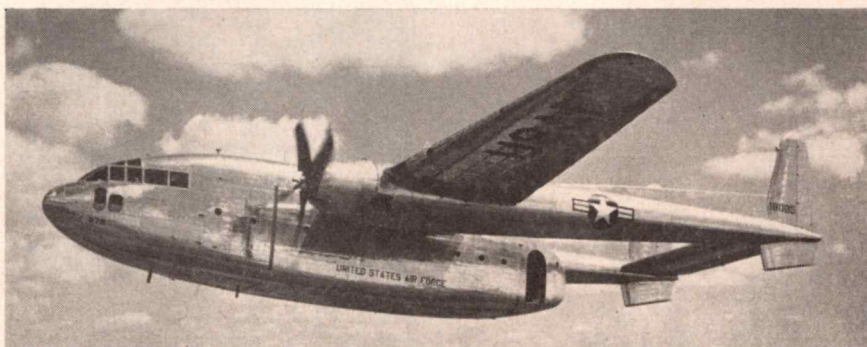
J57s and was designed for carriers of all classes. Manufacturer: Douglas Aircraft Company, Long Beach, Calif.

SPECIFICATIONS: Span 72 ft. 6 in.; Length 75 ft.; Height 23 ft. 7 in.; Empty weight 39,735 lb.; Gross weight 70,000 lb.; Overload gross weight 79,000 lb. Areas wing 780 sq. ft. aileron 32.6 sq. ft.; flap 108.8 sq. ft.; fin 129.9; rudder 32.5 sq. ft.; stabilizer 114.8 sq. ft.; elevator 52.2 sq. ft.; Engine (2) Allison J71-A-9.

PERFORMANCE: All data classified.

FAIRCHILD AIRCRAFT

FAIRCHILD C-119 FLYING BOXCAR ASSAULT TRANSPORT

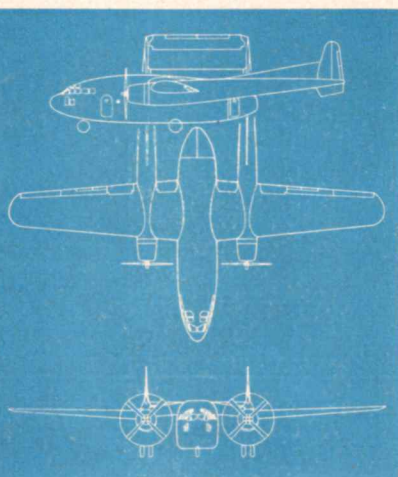


The Flying Boxcar also is used by the Marine Corps as the R4Q-2. Developed from the 1945 model C-82, the C-119B and C-119C use Pratt & Whitney Wasp Major engines, and the C-119F and C-119G use Wright R-3350 turbocompound engines. Versatility is available in boxcar fuselage, equipped with electrically operated monorail for rapid aerial delivery of supply bundles. Also can airdrop supplies, military vehicles, artillery pieces, and palletized combat equipment through fuselage rear clamshell doors. Can paradrop 42 fully equipped troopers, and can airlift 60 troopers. In 20 minutes, cargo compartment can be converted to carry 38 litter patients and four attendants. Manufacturer: Fairchild Aircraft Div., Fairchild Engine & Air-

plane Corp., Hagerstown, Md.

SPECIFICATIONS: Span 109 ft. 3 in.; Length 86 ft. 6 in.; Height 26 ft. 3 in.; Empty weight 39,920 lb.; Design gross weight 64,000 lb.; Maximum gross weight 77,000 lb.; Area wing 1447 sq. ft.; aileron 85.9 sq. ft.; flap 20 sq. ft.; fin 198 sq. ft.; rudder 55.6 sq. ft.; stabilizer 172.34 sq. ft.; elevator 113.86 sq. ft.; Engine (2) Wright R-3350-32W 3500 hp take-off; 2600 hp normal rated; Propeller Aero products A-644; Crew 5.

PERFORMANCE: Maximum speed 296 mph at 17,000 ft.; 258 mph at S. L.; Cruising speed 200 mph; Rate of climb 1200 fpm; Stall 95 mph with flaps; Range 2000 mi. with 18,000 lb. cargo; 3500 mi. range with auxiliary fuel; Service ceiling 30,000 ft.; Absolute ceiling 31,000 ft.



FAIRCHILD C-123B ASSAULT TRANSPORT

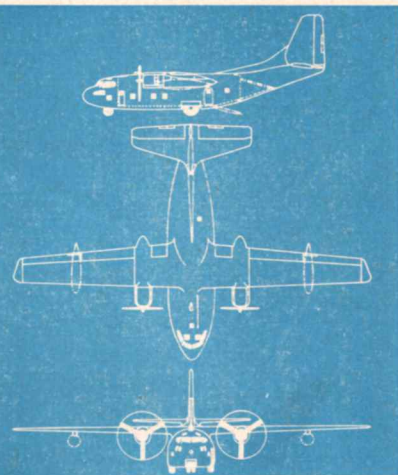


Designed specifically as an assault transport, the C-123B can accommodate 60 fully-equipped troops, 50 litter patients or eight tons of bulk cargo, vehicles, artillery pieces, and combat supplies. Can make short field landing and take-offs using unimproved forward area airstrips. Manufacturer: Fairchild Aircraft Division, Fairchild Engine and Airplane Corp., Hagerstown, Md.

SPECIFICATIONS: Span 110 ft.; Length 76 ft. 4 in.; Height 34 ft. 1 in.; Empty weight 31,058 lb.; Design gross weight 54,000 lb.; Maximum gross weight 60,000 lb.; Area wing

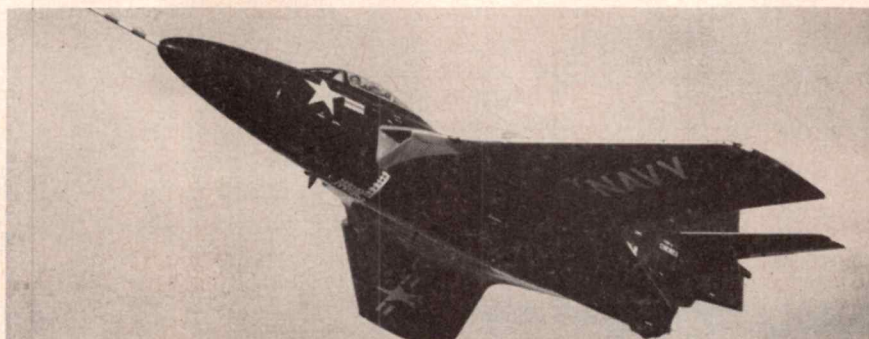
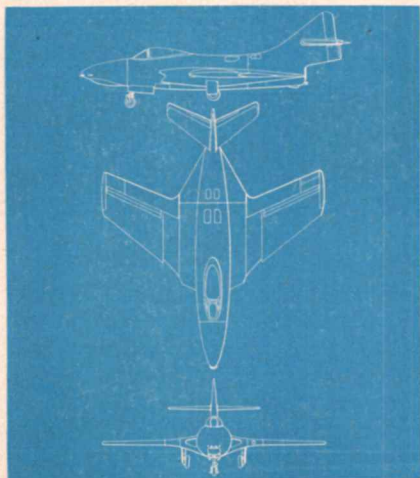
1223.22 sq. ft.; aileron 83.28 sq. ft.; flap 128 sq. ft.; fin 314.17 sq. ft.; rudder 59.19 sq. ft.; stabilizer 217.66 sq. ft.; elevator 127.88 sq. ft.; Engine (2) Pratt & Whitney R-2800, 2500 hp at 2800 rpm takeoff; 1900 hp at 2600 rpm normal rated; Propeller Hamilton Standard; Main tire 17:00-20 low pressure; Fuel capacity 1514 gal. normal—900 gal. auxiliary; Crew 2.

PERFORMANCE: Maximum speed 293 mph at 13,000 ft.; Cruising speed 188 mph at 5000 ft.; Landing speed 85 mph; Rate of climb 1380 fpm at S. L.; Service ceiling 23,000 ft.; Range maximum fuel 3,450 mi.



GRUMMAN AIRCRAFT ENGINEERING CORP.

GRUMMAN F9F-8 COUGAR CARRIER FIGHTER

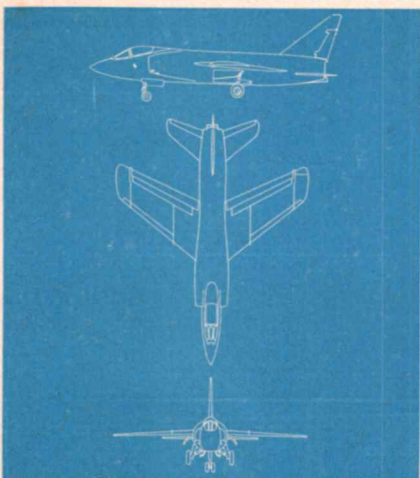


An improved version of the F9F-6, the Cougar features leading edge wing sections, more wing area, longer fuselage, and greater fuel capacity. These modifications improved the 8's speed, range, maneuverability and low speed handling characteristics. First flight was Jan. 18, 1954. Manufacturer: Grumman Aircraft Engineering Corp., Bethpage, L. I., N. Y.

SPECIFICATIONS: Span 34 ft. 6 in.; Length 41 ft. 7 in.; Height 12 ft. 3 in.; Gross weight more than 20,000 lb. Engine Pratt & Whitney J48-P-8, 7000 lb. static thrust dry at 11,000 rpm at sea level.

PERFORMANCE: Maximum speed 700 mph; Service ceiling 50,000 ft.; Rate-of-climb 40,000 ft. in 7 min.; Range more than 1000 miles.

GRUMMAN F9F-9 TIGER CARRIER FIGHTER



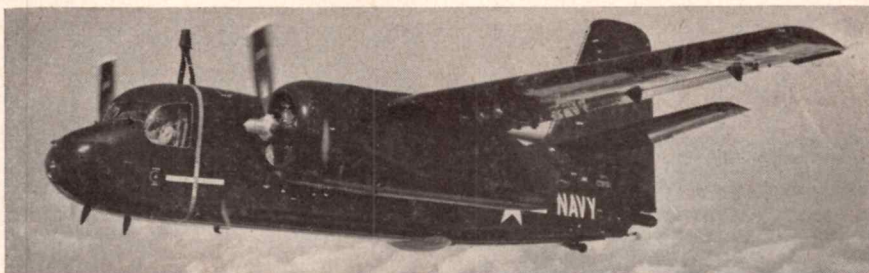
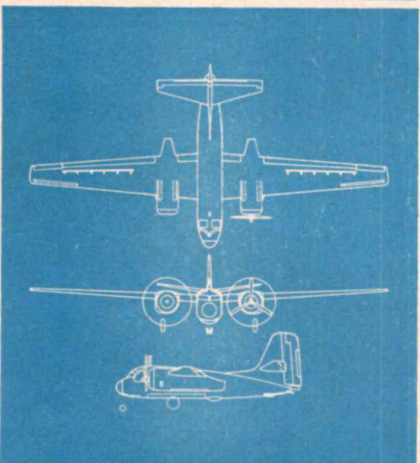
Although bearing an F9F designation, the Tiger is a completely new design, capable of supersonic speeds in level flight. Unusual design utilizes indented (coke bottle) fuselage to reduce drag characteristics at transonic speeds. Designed to carry air-to-air and air-to-ground missiles. First

flight July 30, 1954.

SPECIFICATIONS: Span 31 ft. 7-5/10 in.; Length 40 ft. 10 in. Height 12 ft. 8-5/10 in.; Engine Wright J65 with afterburner; static thrust of 7220 lb. at 8300 rpm; normal related thrust 6400 lb at 8000 rpm.

PERFORMANCE: All data classified.

GRUMMAN S2F SUB-KILLER ANTI-SUBMARINE



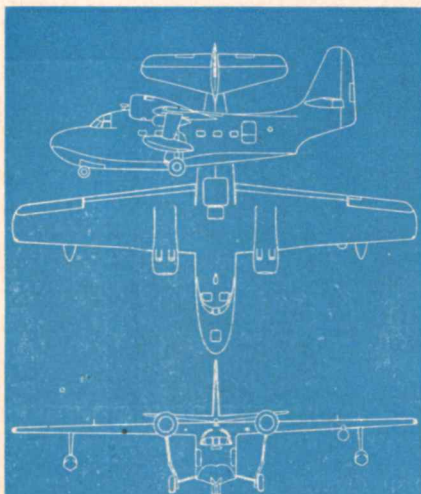
Fully equipped with the latest search, destructive and navigational equipment, the S2F is the Navy's first carrier-based aircraft capable of performing the combined hunter-killer function. Can land and takeoff from the smallest carriers. Has exceptional single-engine performance. Speed and high performance have been exchanged for endurance to permit hours of sea patrol seeking the enemy

snorkel. Full combat version will mount huge search radar dome, carry torpedoes, depth charges, mines, sonobuoys, and cannon. Manufacturer: Grumman Aircraft Engineering Corporation, Bethpage, L. I., N. Y.

SPECIFICATIONS: Span 69 ft., 8 in.; Length 42 ft., 3 in.; Height 16 ft. 3 in.; Engine (2) Wright R-1820-82, 1,525 hp at takeoff. Crew 4.

PERFORMANCE: All data classified.

GRUMMAN SA-16A ALBATROSS AIR-SEA RESCUE



Developed by Navy as XJR2F-1, it is now used by Navy as UF-1 utility transport, by MATS Air Rescue Service as air-sea rescue craft. Tri-phibious version features retractable keel skid for operation on ice. Now on duty throughout world by USAF as standard long range rescue amphibian. Manufacturer: Grumman Aircraft Engineering Corp., Bethpage, L. I., N. Y.

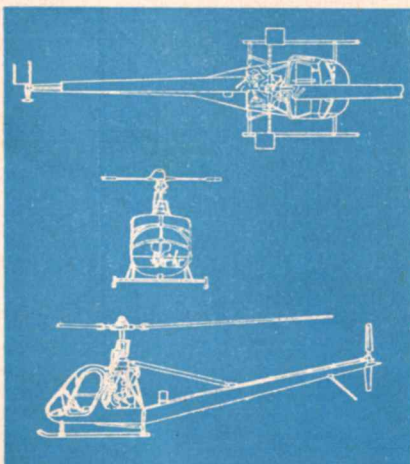
SPECIFICATIONS: Span 80 ft.; Length 62 ft. 4 in.; Height 24 ft. 5 in.; Empty weight 24,000 lb.; Gross

weight 34,000 lb.; Engine (2) Wright R-1820-76A, 1425 hp at 2700 rpm takeoff, 975 hp at 2500 rpm normal rated at 14,700 ft.; Propeller (2) Hamilton Standard 43D50 three-blade, reversible pitch, 11 ft. dia.; Fuel normal 675 gal., external fuel 600 gal., total 1275 gal.; oil 58 gal. Electrical System 24-volt; Control surfaces fabric covered.

PERFORMANCE: Maximum speed 277 mph; Cruising speed 230 mph; Rate-of-climb 1400 fpm; Range 2700 miles; Crew 6.

HILLER HELICOPTERS

HILLER H-23B/HTE-2 TRAINER



Hiller 12-B is commercial model, H-23B is Army model, HTE-2 is Navy model. Both military and civilian models are in service with foreign governments throughout the world. Manufacturer: Hiller Helicopters, Palo Alto, Calif.

SPECIFICATIONS: Main rotor dia. 35 ft.; Anti-torque rotor dia. 5 ft. 6 in.; length 38 ft. 7 1/2 in.; Height 9 ft. 7 1/2 in.; Empty weight 1705 lb. (H-

23B), 1754 lb. (HTE-2); Gross weight 2451 lb. (H-23B), 2549 lb. (HTE-2); Engine Franklin O-335-6, 200 hp at 3100 rpm at sea level; Fuel 28 gal.

PERFORMANCE: Maximum speed at sea level 84 mph; cruising speed at sea level 70 mph; Initial rate of climb 770 fpm; Hovering ceiling 3200 ft.; Service ceiling 9,400 ft.; Range 135 mi.

HILLER YH-32 HORNET TRAINER

3-View
Not Available



Army and Navy have ordered several Hornets for evaluation and study of the ramjet helicopter principle and performance in actual service. Services will determine suitability of the two-place jet machine for lightweight reconnaissance and liaison work. Small anti-torque rotor is gear-driven from main rotor. Manufacturer: Hiller Helicopters, Palo Alto, Calif.

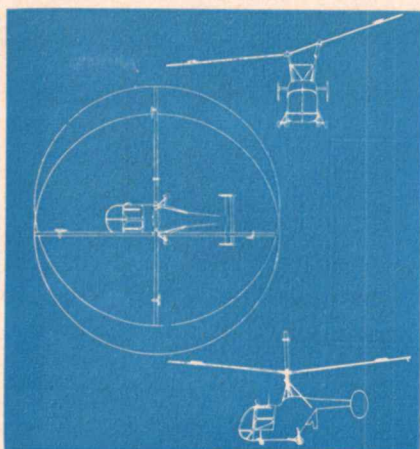
SPECIFICATIONS: Rotor dia. 23 ft.;

Height 8 ft.; Empty weight 360 lb.; Gross weight 960 lb.; Engine: two Hiller 8RJ2B ramjet units, 35 lb. static thrust ea.; Fuel capacity 52 gal.

PERFORMANCE: Maximum speed 80 mph; Cruising speed 70 mph; Initial rate-of-climb 830 fpm; Hovering ceiling in ground effect 4000 ft.; Absolute ceiling 12,000 ft.; Range still air 31 mi.

KAMAN AIRCRAFT CORP.

KAMAN HOK-1 OBSERVATION



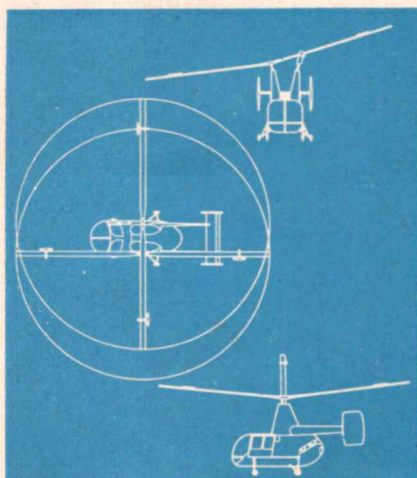
Can be readily converted to ambulance version carrying two litter patients and one medical attendant or an additional ambulatory patient, in addition to the pilot. The HOK-1 uses the patented Kaman servo-flap for blade control. The twin vertical fins provide directional stability in high speed flight. Stabilizer control-

lable from collective pitch control. Manufacturer: The Kaman Aircraft Corp., Windsor Road, Bloomfield, Conn.

SPECIFICATIONS: Rotor dia. 47 ft.; Length 22 ft. 7 in.; Height 12 ft. 6 in.; Engine Pratt and Whitney AR-1340, 600 hp; Tread (front) 64½ in., (rear) 90 in.

PERFORMANCE: All data classified.

KAMAN HTK-1 TRAINER



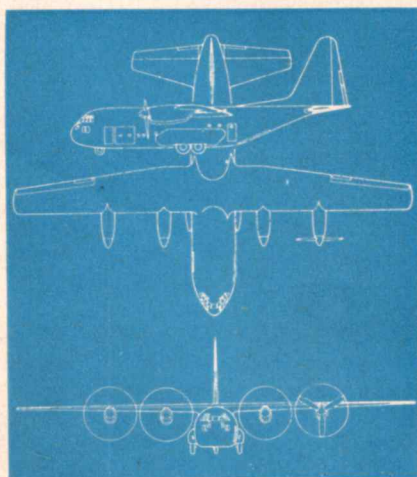
Features servo tab control of rotor blade angle. Side-by-side seating facilitates student training. Inter-meshing rotors permit lateral disposition of dual rotors without cantilever mountings. Initial production quantity completed August 1953. Manufacturer: The Kaman Aircraft Corp., Windsor Road, Bloomfield, Conn.

SPECIFICATIONS: Rotor dia. 40 ft.; Fuselage length 20 ft. 6 1/2 in.; Height 12 ft. 5 in.; Empty weight 1750 lb.; Gross weight 2500 lb.; Engine Lycoming O-435-4, 250 hp at 3400 rpm.; Fuel 40 gal.

PERFORMANCE: Maximum speed 75 mph; Cruising speed 70 mph; Vertical rate-of-climb 700 fpm; Service ceiling 10,000 ft.; Range 194 mi.

LOCKHEED AIRCRAFT CORP.

LOCKHEED YC-130 CARGO

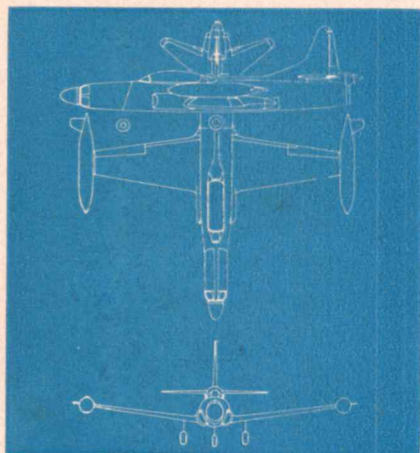


First USAF transport designed expressly for turboprop power, the C-130 is an assault cargo transport especially designed for short, rough field operation. The lower aft fuselage comprises a loading ramp up which a 155mm howitzer or equivalent concentrated load can be driven. The cabin floor is only 45 in. from the ground to permit truck-bed loading through the forward doors or rear ramp. Manufacturer: Lockheed

Aircraft Corporation, Marietta, Ga. **SPECIFICATIONS:** Span 132 ft.; Length 95 ft.; Height 38 ft.; Gross weight about 130,000 lb.; Engine (4) Allison T56-A-1 turboprop, 3750 hp.; Curtiss Turboelectric 3-blade propellers.

PERFORMANCE: Estimated Maximum speed more than 400 mph; Cruising speed about 350 mph at high altitude. Range about 3,000 miles.

LOCKHEED F-94C STARFIRE FIGHTER



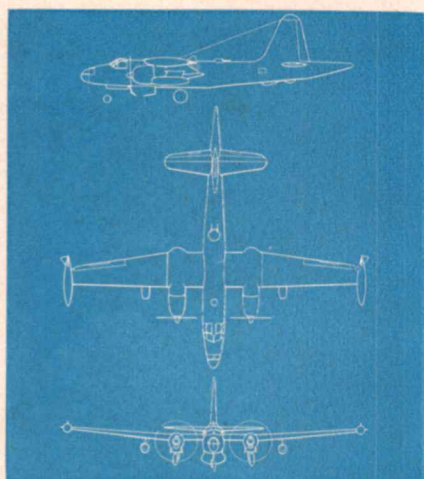
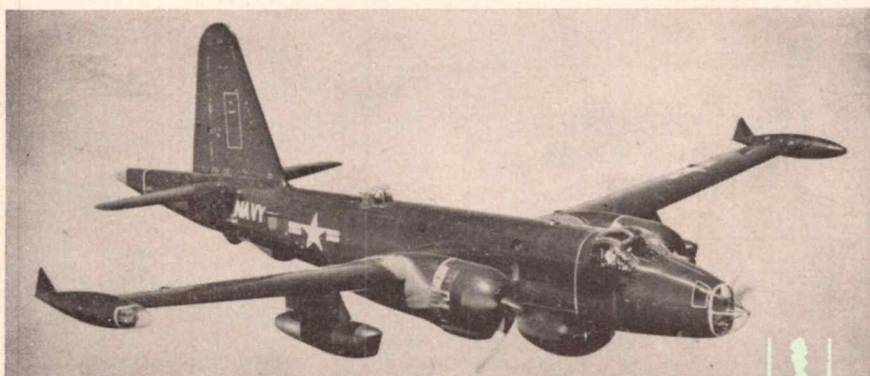
New all-weather fighter is developed from previous F-94B and A models, the latter scored Korean night combat victories over the MiG-15. F-94C models feature thinner wing, swept tail for near-sonic performance. Wing uses special Lockheed machine-tapered and ribbed skin plating. Production completed February, 1954. Manufacturer: Lockheed Aircraft Corporation, Burbank, Calif.

SPECIFICATIONS: Span 38 ft. 10 1/2 in.; Length 44 ft. 5 1/2 in.; Height 14

ft. 9 in.; Empty weight 9557 lb.; Gross weight 27,000 lb. Engine Pratt & Whitney J48-P-5, 8000 lb. at 11,000 rpm at sea level, 9000 lb. W/A. Fuel capacity including tip tanks 648 gal. Armament 24 2-75 in. rockets in nose plus 24 in. wing pods. Crew 2.

PERFORMANCE: Maximum speed 607 mph; Rate-of-climb 9250 fpm; Service ceiling 48,500 ft.; Takeoff 3720 ft. Combat radius more than 500 miles.

LOCKHEED P2V-7 NEPTUNE



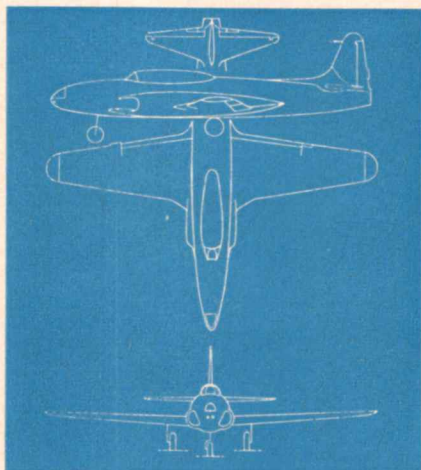
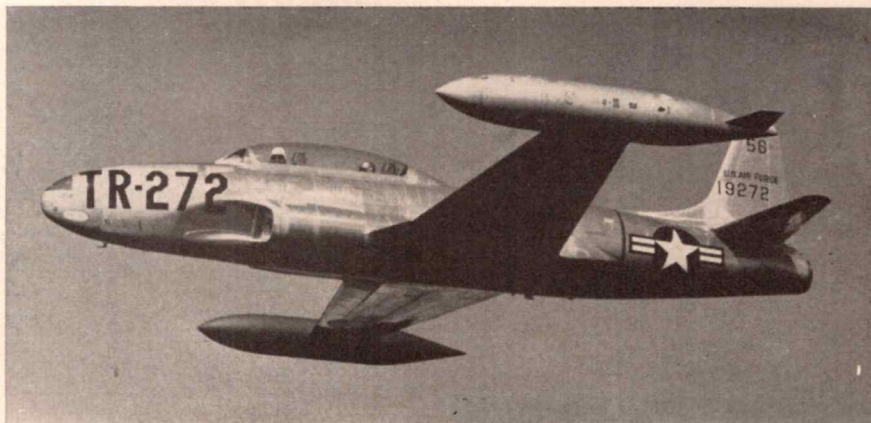
New P2V-7 is advanced anti-submarine warfare model featuring auxiliary turbojet engines in wing pods. New model features substantial weight saving, new canopy, new gear retraction system, extensive interior arrangement improvements. Giant stinger in tail houses magnetometer, snorkel-detecting equipment. Manufacturer: Lockheed Aircraft Corporation, Burbank, Calif.

SPECIFICATIONS: Span 103 ft. 10 in.; Length 91 ft. 8 in.; Height 29 ft. 4 in.; Area wing 1000 ft.; Empty weight 43,950 lb.; Gross weight 72,-

000 lb.; Engine (2) Wright R-3350-30W Turbo Compound, 3250 hp at 2900 rpm at takeoff, rated 2650 hp at 2600 rpm at 6500 ft. plus (2) Westinghouse J34-WE-34 (or equivalent), 3400 lb. static thrust; Fuel capacity 3910 gal. gasoline, 300 gal. jet fuel in tip tanks; Propeller (2) Hamilton Standard three blade; Crew 7.

PERFORMANCE: Estimated maximum speed all engines 421 mph; piston engines only 344 mph; Rate-of-climb all engines 3100 fpm; Service ceiling all engines 31,000 ft.; Range 3700 mi.

LOCKHEED T-33A SHOOTING STAR TRAINER



The T-33A has been in continuous production for seven years, is now in service in Turkey, France, Greece, Canada, Belgium, Holland, Yugoslavia, Spain, Portugal and Italy. It is in production by Lockheed and by Canadair, Ltd. U.S. Navy uses TV-2 version. Trainer is based on F-80C fighter, first U.S. combat jet fighter. Manufacturer: Lockheed Aircraft Corp., Burbank, Calif.

SPECIFICATIONS: Span 38 ft. 10½ in.; Length 37 ft. 8½ in.; Height 11

ft. 8½ in.; Empty weight 8400 lb.; Gross weight 15,000 lb. Engine Allison J33-A-5, 5200 lb. at 11,750 rpm at sea level. Fuel capacity 683 gals. including tip tanks. Crew 2.

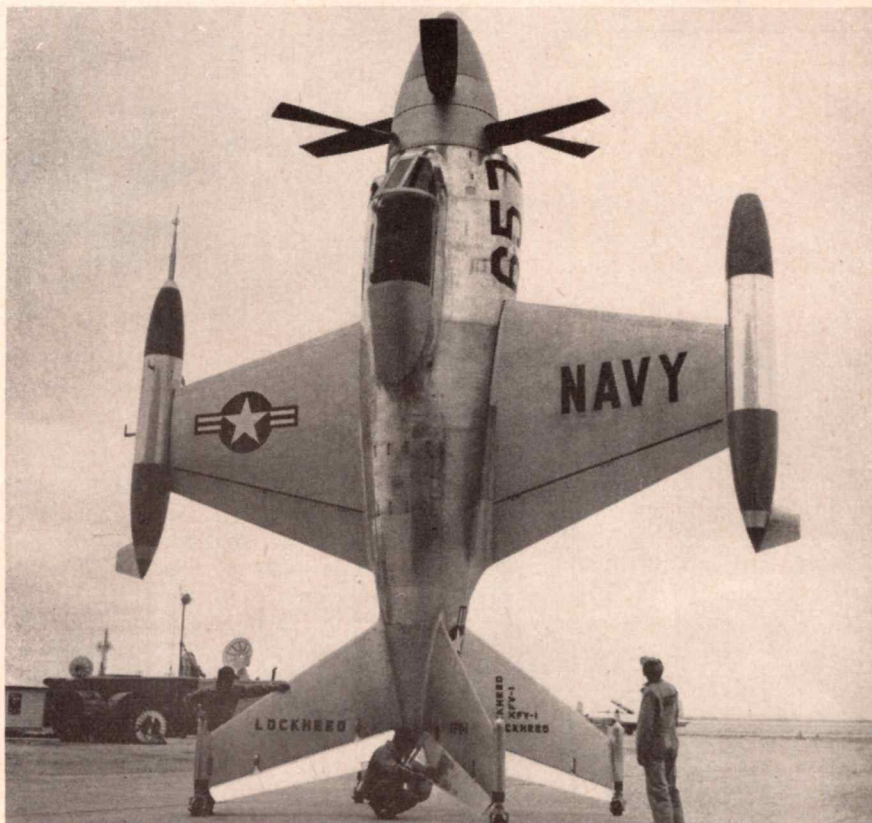
PERFORMANCE: Maximum speed over 600 mph; Rate-of-climb 5525 fpm; Service ceiling over 45,000 ft.; Range 1345 miles; Takeoff over 50-ft. obstacle 2750 ft.; Land over 50-ft. obstacle 3050 ft.

LOCKHEED XFV-1 VERTICAL RISER FIGHTER

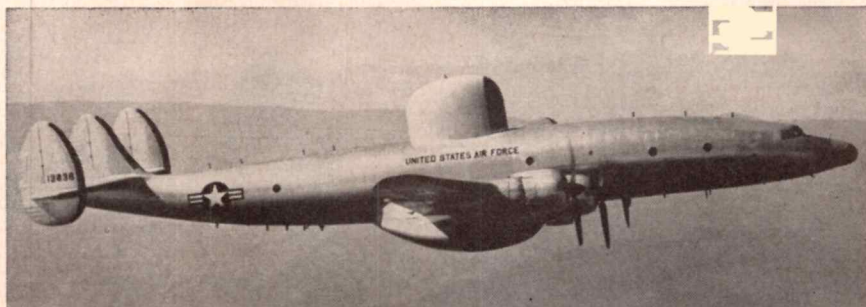
Airplane features short, straight wings and an X-shaped tail. Plane designed to accommodate a conventional, nonretracting landing gear, enabling horizontal takeoffs and landings. Stands upright on X-shaped tail for vertical takeoff. Manufacturer: Lockheed Aircraft Corp., Burbank, Calif.

SPECIFICATIONS: Engine 1 Allison T-40 turbo-prop; Propeller (2) Curtiss electric, contra-rotating, 3 bladed. All other data restricted.

PERFORMANCE: All data restricted.



LOCKHEED RC-121C RADAR PICKET



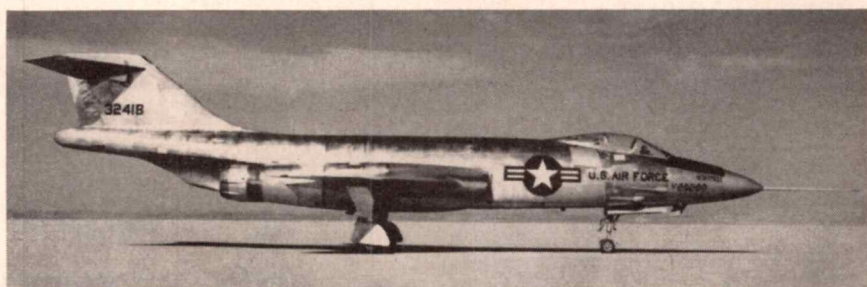
Operated by ADC as part of "early warning system." Special Navy version of Super Constellation, WV-2, maintains station at high altitude above fleet to detect enemy aircraft far beyond horizon range of surface

radar. Warnings are radioed to fleet carriers below for fighter intercept coverage. Manufacturer: Lockheed Aircraft Corporation, Burbank, Calif. **SPECIFICATIONS:** Span 126 ft.; Length 116 ft. 2 in.; Height 30 ft.

Engine (4) Wright R-3350-34, 3250 hp at 2900 rpm for takeoff. Gross weight 120,000 lb. **PERFORMANCE:** (Estimated) Cruising speed 335 mph; Endurance more than 24 hours.

MCDONNELL AIRCRAFT CORP.

MCDONNELL F-101A VOODOO FIGHTER



Designed to meet Air Force requirements for a long-range fighter, the Voodoo is scheduled to be assigned to the Strategic Air Command. It is in the supersonic class, capable of in-flight refueling and carrying atomic

weapons. Undergoing flight test at Edwards AFB, Calif. Most of large fuel load is contained in the fuselage. Manufacturer: McDonnell Aircraft Corp., St. Louis, Mo.

SPECIFICATIONS: Span 39 ft. 8 in.; Length 67 ft. 5 in.; Height 18 ft. Engine (2) Pratt & Whitney J-57 turbojets with approx. 20,000 lbs. thrust. **PERFORMANCE:** All data classified.

MCDONNELL LXV-1 CONVERTIPLANE

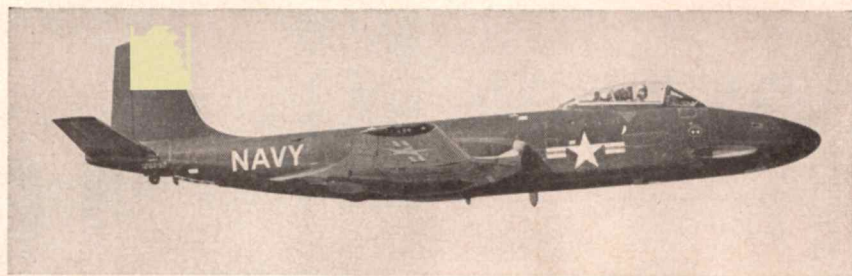
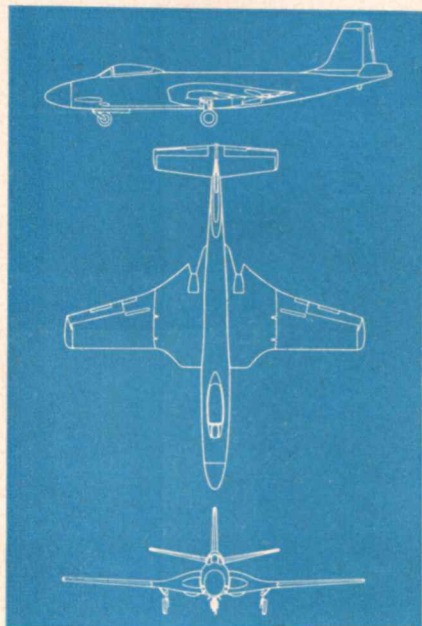


McDonnell XV-1 uses principle of the "unloaded rotor" in which rotor provides vertical climb but unloads onto the fixed wing as high forward speed is attained. Rotor is driven by three McDonnell-developed pressure jet units at the tips. The Continental engine, mounted in the aft fuselage,

supplies compressed air to the jet units during vertical flight and shaft power to the pusher propeller for forward flight. The XV-1 carries three passengers or two litter patients and attendant. Manufacturer: McDonnell

Aircraft Corp., St. Louis, Mo. **SPECIFICATIONS:** Span 26 ft.; Length 30 ft.; Height 10 ft.; Engine Continental, 500 hp. plus three McDonnell pressure jets. **PERFORMANCE:** Data not available.

**MCDONNELL F2H-4
BANSHEE
CARRIER FIGHTER**

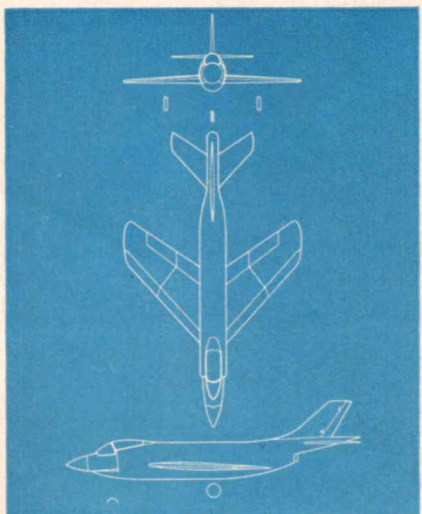


Lengthened fuselage section houses additional internal fuel for long range. Earlier F2H-2N featured extended radar nose; F2H-2P mounted cameras in extended nose. Now out of production, last Banshee fighter was completed Oct. 30, 1953. Manufacturer: McDonnell Aircraft Corp., St. Louis, Mo.

SPECIFICATIONS: Span 44 ft. 11 in.; Length 47 ft. 6 in.; Height 14 ft. 5½ in. Engine (2) Westinghouse

J34-WE-34, 3250 lb. thrust; Fuel capacity with tip tanks more than 1,000 gal.; Wings fold to 18 ft. span for carrier elevator stowage; Gross weight more than 19,000 lb; Crew 1. **PERFORMANCE:** Maximum speed over 600 mph; Cruising speed more than 500 mph; Rate-of-climb better than 900 fpm; Service ceiling above 50,000 ft.; Normal range over 2000 miles with tip tanks.

**MCDONNELL F3H-IN
DEMON
CARRIER FIGHTER**



All-weather fighter-bomber mounts 6 20mm cannon plus external load of rockets and bombs. F3H-2 production model will use Allison J71 engine of 9200 lb. thrust static and 15,000 lb. thrust with afterburning. F3H-3 has J73-GE-3. Controls full power operated with "solid" stabilizer and power-operated leading edge slats and trailing edge slotted flaps. Prototype made first flight Aug. 7, 1951 at Lambert-St. Louis Municipal Airport and has undergone intensive de-

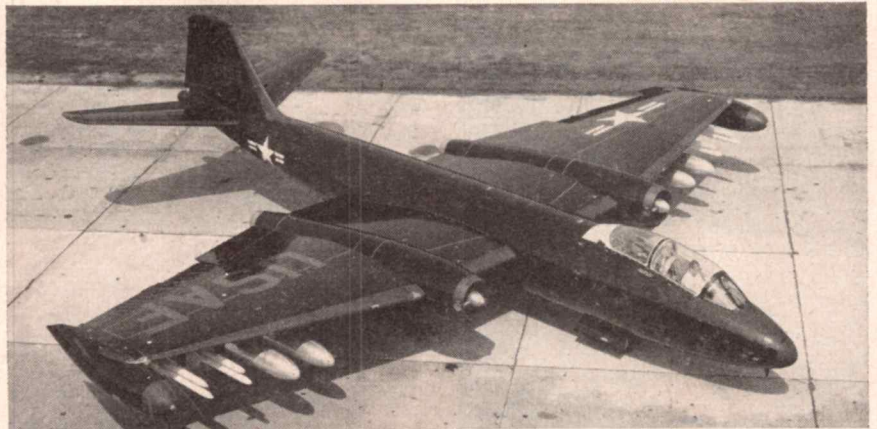
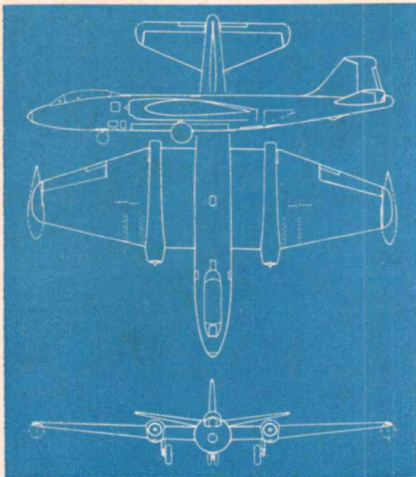
velopment, including carrier qualification trials aboard the U.S.S. Coral Sea. Manufacturer: McDonnell Aircraft Corporation, St. Louis, Mo.

SPECIFICATIONS: Span 35 ft. 4 in.; Length 58 ft. 4 in.; Height 13 ft. 11 in.; Gross weight 23,400 lb.; Engine Westinghouse J40-WE-8, 7500 lb. static thrust, 13,800 lb. thrust with afterburning; Crew 1.

PERFORMANCE: Maximum speed 778 mph; Ceiling 45,000 ft.; Range 2,000 mi.; Rate-of-climb 12,000 fpm.

THE GLENN L. MARTIN CO.

MARTIN B-57B NIGHT INTRUDER LIGHT BOMBER



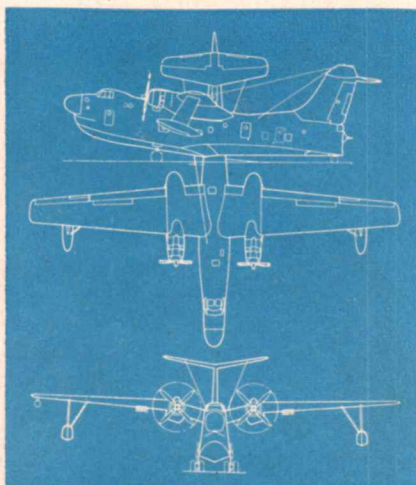
The B-57B is a highly maneuverable light bomber with special qualifications for night interdiction missions. It mounts eight machine guns in the wings and carries a heavy bomb load on pylons under its wings and on its rotating bombdoor. Its air frame is similar to the B-57A, and the RB-57 both of which are now in service. A fourth version now in production is the B-57C, the USAF's first twin-jet

bomber trainer. Manufacturer: The Glenn L. Martin Co., Baltimore, Md.

SPECIFICATIONS: Span 64 ft.; Length 65 ft. 6 in.; Height 16 ft.; Gross weight about 50,000 lbs.; Engine (2) Wright J-65; 7200 lbs. static thrust.

PERFORMANCE: Maximum speed in excess of 570 mph; Service ceiling more than 45,000 ft.; Range more than 2000 mi.

MARTIN P5M-2 MARLIN PATROL



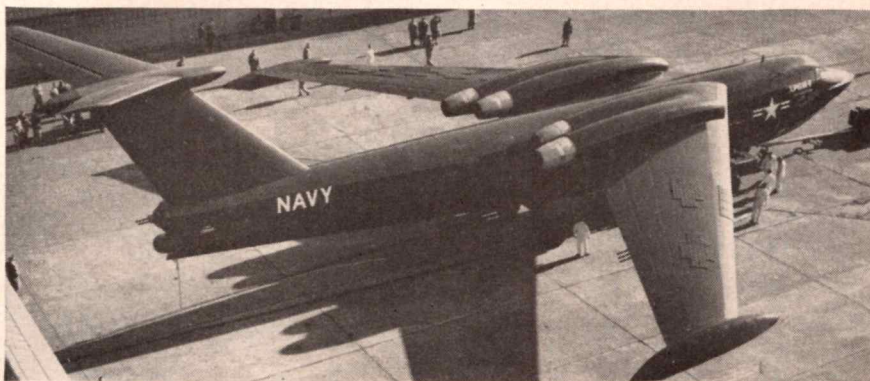
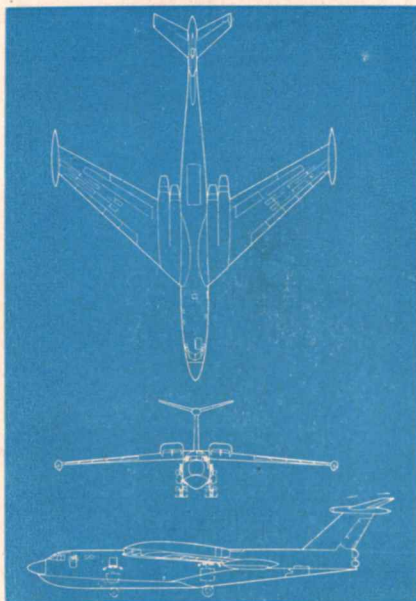
The P5M-2 flying boat features a long afterbody designed to improve takeoff characteristics and reduce bouncing and instability during landing. To assist water maneuvering, a pair of hydroflaps are mounted on aft hull and act as water rudders. The big flying boat is heavily equipped with radar and special devices for the detection of submarines as well as with depth charges and bombs for

their destruction. Manufacturer: The Glenn L. Martin Co., Baltimore, Md.

SPECIFICATIONS: Span 118 ft.; Length 98 ft. 11 in.; Height 33 ft.; Area wing 1406 sq. ft.; Engine (2) Wright R-3350-32W Turbo-Cyclone; Propeller Hamilton Standard 34E60 reversible; Gross weight 73,055 lb.;

PERFORMANCE: Maximum speed over 260 mph; Service ceiling 22,500 ft.

MARTIN XP6M-1 SEAMASTER ATTACK SEAPLANE



Expected to be in the air early this spring. Primary missions of the Seamaster are minelaying and photo-reconnaissance. Said to be in the same performance class as landplanes and first seaplane in the 600 mph bracket. Contains in its hull a watertight rotary mine door in which mine stores or a camera pod can be installed. Engines located in two engine nacelles on top of the wing keeping them out of the spray and making servicing and re-

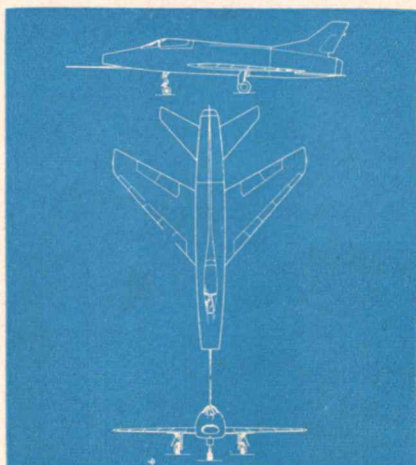
placement relatively simple. Manufacturer: The Glenn L. Martin Company, Baltimore, Maryland.

SPECIFICATIONS: (Approx.) Span 100 ft.; Length 120 ft. Height (from bottom of hull to top of empennage) 32 ft.; Engine (4) Allison J-71 turbojets with take-off afterburners. Crew 5.

PERFORMANCE: Maximum speed over 600 mph; Normal cruise altitude 40,000 ft.

NORTH AMERICAN AVIATION, INC.

NORTH AMERICAN F100 SUPER SABRE INTERCEPTOR



It features 45-deg. swept wing, uses tail braking parachute, "solid" stabilizer, large ventral air brake. Now in vast quantity production, it is next standard USAF fighter-interceptor. First operational plane to exceed the speed of sound. Manufacturer: North American Aviation, Inc., Columbus, Ohio.

SPECIFICATIONS: Span 36 ft.; Length 45 ft.; Height 14 ft.; Gross weight 22,000 lb.; Engine Pratt & Whitney J57-P-7, 10,000 lb. static thrust; Crew 1.

PERFORMANCE: Maximum speed M 1.3 (860 mph) at 45,000 ft.; Service ceiling more than 50,000 ft.; Combat radius more than 600 mi.

NORTH AMERICAN FJ-4 FURY FIGHTER

An improvement of the FJ-3, the FJ-4 Fury's general configuration is similar to the FJ-2 and 3 now on duty with the fleet. It has 35 degree swept back wings, hydraulically operated irreversible controls and artificial feel for the ailerons and all-movable tail. Outstanding recognition features are



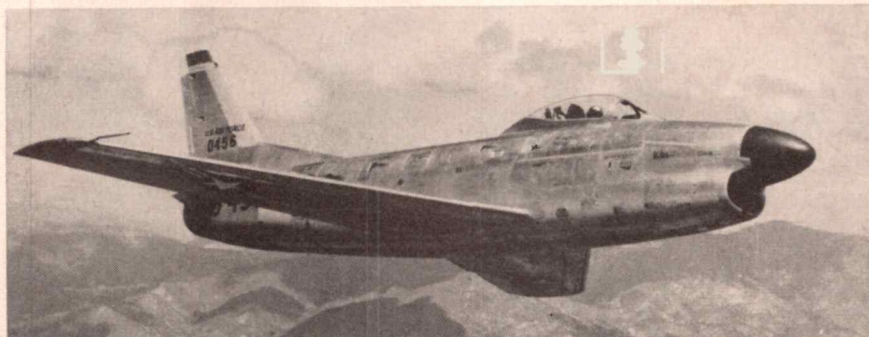
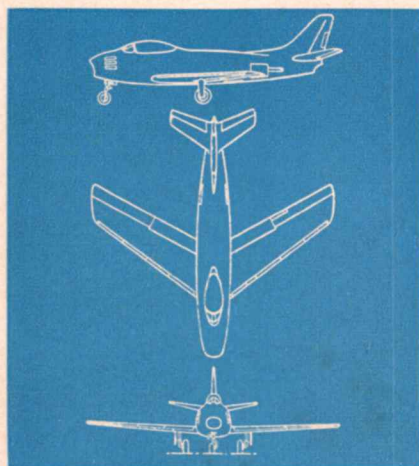
thin wings and tail and a dorsal fairing aft of the canopy. Manufacturer: North American Aviation, Columbus, Ohio.

SPECIFICATIONS: Span 39 ft. 1 in.; Length 37 ft. 6 in.; Height 12 ft. 8

in.; Weight over 19,000 lb.; Engine Wright J-65-W4 with approx 7800 lb. thrust. Armament (4) 20 mm.

PERFORMANCE: Maximum speed over 690 mph; Service Ceiling over 45,000 feet.

NORTH AMERICAN F-86D SABRE INTERCEPTOR



All-weather interceptor features search radar antenna in the nose and special electronic equipment for all-weather operation. Afterburner-equipped General Electric J47 engine provides substantial performance increase over MiG-killing F-86A. Engine is electronically controlled through a series of sensors, which detect changes in variety of conditions and translate them into power changes. Fighter version, F86K, features visible gun ports in

front fuselage. Manufacturer: North American Aviation, Inc., Los Angeles, Calif.

SPECIFICATIONS: Span 37 ft. 1 in.; Length 41 ft. 8 in.; Height 15 ft. Gross weight 18,000 lb. Engine General Electric J47-GE-17 with afterburner, 5200 lb. thrust normal, more than 8000 lb. with afterburner. Armament 24 rockets. Crew 1.

PERFORMANCE: Maximum speed 715 mph; Service ceiling over 45,000 ft. Tactical radius over 500 miles.

NORTH AMERICAN TF-86F SABRE TRAINER

New training plane was created by five-foot fuselage extension to famed F-86F Sabre fighter. Training version adds intercom system, omni-range receiver, instrument landing system receiver and direction finding equipment to fighter systems. Only two .50-cal. machine guns are used for gunnery training. New trainer can be used for pilot training in highspeed flying, gunnery and dive bombing. Now undergoing USAF



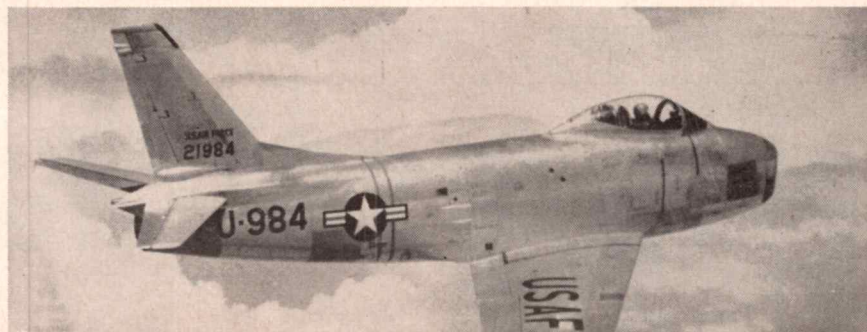
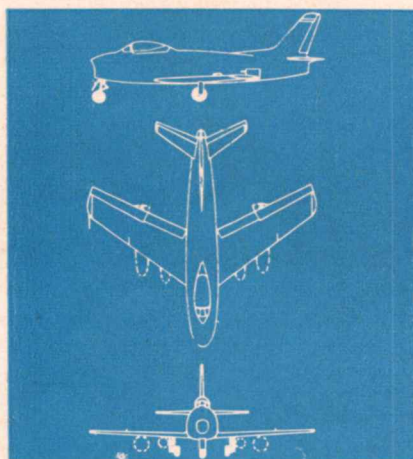
trainer evaluation. Manufacturer: North American Aviation, Inc., Los Angeles, Calif.

SPECIFICATIONS: Span 37 ft.; Length 42 ft.; Height 14 ft.; Gross weight 17,000 lb.; Engine General Electric J47-GE-27, 5800 lb. static

thrust; Armament two 0.50-cal. machine guns; Two 200-gal. drop tanks plus two 120-gal. aux. tanks.

PERFORMANCE: Maximum speed more than 650 mph at sea level; Service ceiling more than 45,000 ft.; Combat radius more than 600 miles.

NORTH AMERICAN F-86H—SABRE JET FIGHTER BOMBER



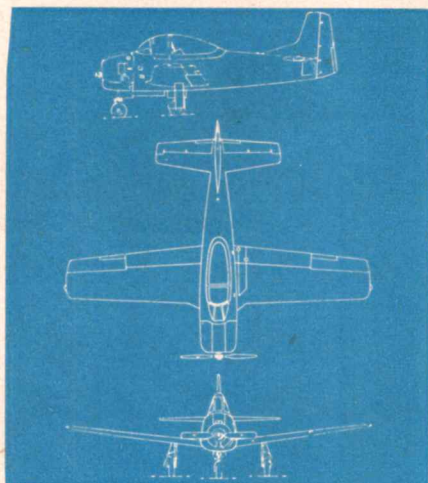
Special features include hydraulically-operated speed brakes and controls, electrically-operated flaps, a geared elevator, modified wing with stationary, extended leading edge and self sufficient starting system. It also has a clam shell type cockpit canopy, a companion feature to the improved ejection seat mechanism. 35 degree swept back wing. Manufacturer: North American Aviation Inc.,

Columbus, Ohio.

SPECIFICATIONS: Span 37 ft. 1 in.; Length 38 ft. 9 in.; Height 15 ft.; Weight about 18,800 lb.; Engine General Electric J-73-GE-3 with 5600 lb. thrust. Armament (4) 20mm cannon; Crew 1.

PERFORMANCE: Speed over 650 mph; Service ceiling over 45,000 ft.; Combat range approx. 500 mi.

NORTH AMERICAN T-28B ADVANCED TRAINER



One of the first U. S. training planes to use a tricycle gear. Additional improvements include a 12½ degree visibility over the nose (11 degrees is required), lowered and more streamlined canopy, easier accessibility for maintenance (there is an access port directly back of the engine nacelle underneath the fuselage), and special lighting on the instrument panel for use of the "view-lighter" for simulated instrument flying. Production of the earlier Air Force version, the T-28A, has been

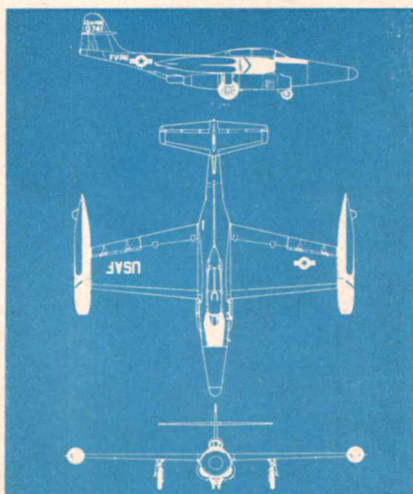
completed after thirty six months. The Navy version, the T-28B, is now in production. Manufacturer: North American Aviation, Inc., Downey, Calif.

SPECIFICATIONS: Span 40 ft., 6 in.; Length 32 ft.; Height 12 ft. 8 in.; Weight empty 5780 lb.; Gross weight 7339 lb.; Engine (1) Wright R-1820 rated 1425 hp.

PERFORMANCE: Maximum speed 346 mph; Rate of climb 3830 fpm; Service ceiling 37,000 ft; Combat radius 1038 mi.

NORTHROP AIRCRAFT, INC.

NORTHROP F-89D SCORPION INTERCEPTOR



Heavily armed fighter type airplane, the F-89D carries 104 2.75 folding fin air-to-air rockets in its permanently mounted wing tip pods. Each rocket is capable of downing the largest bomber. The F-89D carries elaborate airborne electronic equipment and other devices enabling it to fly in darkness or inclement weather. Manufacturer: Northrop Aircraft

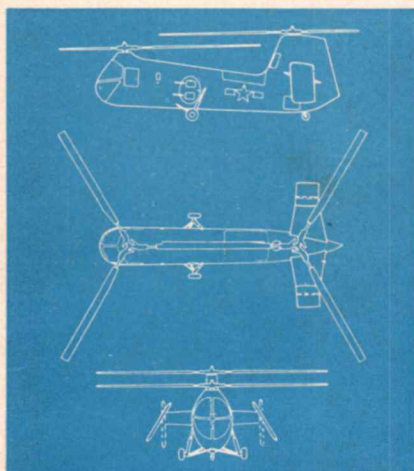
Inc., Hawthorne, Calif.

SPECIFICATIONS: Span 59 ft., 8 in.; Length 53 ft. 9 in.; Height 17 ft. 5 in.; Gross weight more than 40,000 lb. Area wing over 600 sq. ft.; Engine (2) Allison J35-A35 with afterburner; Armament 104 2.75 rockets. Crew 2.

PERFORMANCE: Maximum speed more than 600 mph; Service ceiling above 45,000 ft.

PIASECKI HELICOPTER CORP.

PIASECKI H-21B WORK HORSE ASSAULT TRANSPORT



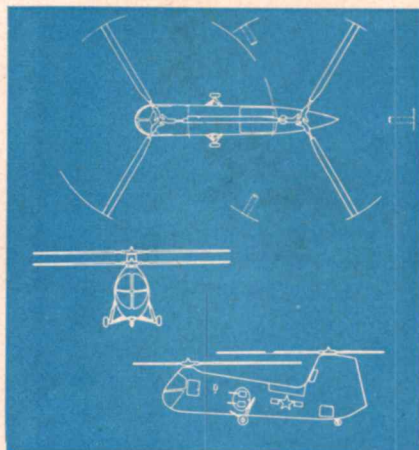
Quantity production of H-21C for U.S. Army as 22-place assault transport and H-21B version for Air Force. Landing gear convertible to floatation gear for water, ice or swamp operations. Model H-25A, Army Mule, is now in production for U. S. Army for use as telephone line layer, emergency rescue, and general utility duties. Manufacturer: Piasecki Helicopter Corp., Morton, Penna.

SPECIFICATIONS: Rotor dia. 44 ft.; Fuselage length 52 ft. 6 in.; Overall length 65 ft. 10 in.; Height 16 ft.;

Empty weight 8479 lb.; Gross weight 13,238 lb. normal, 15,061 lb. max.; Engine Wright R-1820-103, 1425 hp at 2800 rpm; Cabin 20 ft. long, 5 ft. 6 in. wide, 5 ft. 6 in. high, 615 cu ft. volume; Fuel 300 gal. internal, two 255-gal. external tanks for ferry missions.

PERFORMANCE: Maximum speed 132 mph at sea level; Cruise 98 mph at sea level; Vertical rate-of-climb 960 fpm; Service ceiling 9650 ft.; Range 966 mi.

PIASECKI HUP-2 RETRIEVER SEARCH & RESCUE



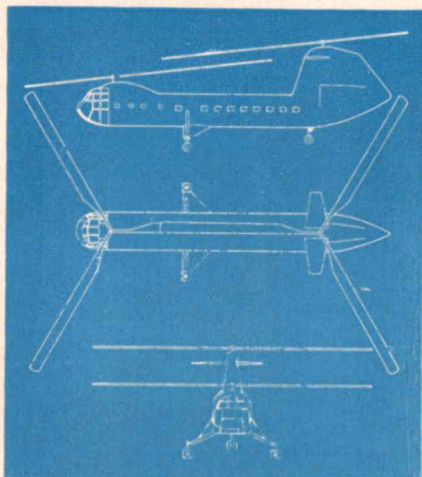
Production model seats six or two-man crew and 1425-lb. cargo. HUP-1 featured vertical fins either side of tail pylon but installation of automatic pilot has obviated their necessity. Manufacturer: Piasecki Helicopter Corp., Morton, Penna.

SPECIFICATIONS: Rotor dia. 35 ft.; Fuselage length 32 ft.; Overall length

48 ft. 6 in.; Height 13 ft. 2 in.; Empty weight 3966 lb.; Gross weight 5355 lb., Maximum 6100 lb.; Engine Continental R-975-34, 525 hp at 2300 rpm; Fuel 100 gal.

PERFORMANCE: Maximum speed 125 mph; Cruising speed 100 mph; Rate-of-climb 1200 fpm; Service ceiling 10,000 ft.; Range 400 mi.

PIASECKI YH-16 TRANSPORTER



Transporter engine is mounted directly under each rotor but in emergency either engine can drive both rotors. Giant machine accommodates 40 troops or 32 litter patients or 4 tons of cargo. Tail ramp permits loading of three jeeps, other cargo. YH-16A version is powered by two Allison T38 gas turbine engines. Manu-

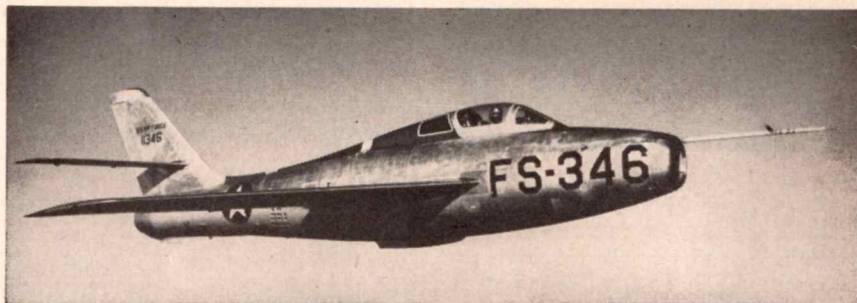
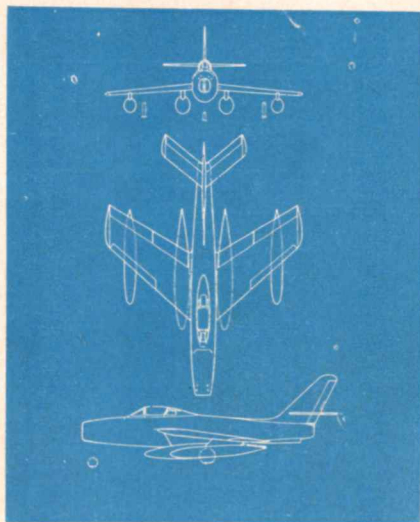
facturer: Piasecki Helicopter Corp., Morton, Penna.

SPECIFICATIONS: Rotor dia. 82 ft.; Fuselage length 77 ft. 10 in.; Overall length 113 ft.; Height 31 ft. 1 in.; Gross weight more than 30,000 lb.; Engine (2) Pratt & Whitney R-2180-11, 1650 hp.

PERFORMANCE: Data not available.

REPUBLIC AVIATION CORP.

REPUBLIC F-84F THUNDERSTREAK FIGHTER-BOMBER



New design features fattened fuselage for larger J65 engine, faired aft canopy structure, numerous detailed refinements. Capable of carrying atomic bomb. Equipped with inflight refueling equipment. Structure uses heavy forge press parts. Manufacturer: Republic Aviation Corporation, Farmingdale, N. Y.

SPECIFICATIONS: Span 33 ft. 6 in.; Length 43 ft. 4 in.; Height 14 ft. 4

in. Engine Wright J65-W-3, 7500 lb. static thrust. External fuel capacity more than 1000 gal. Armament (6) 50 cal.; 6000 lb. externally mounted rockets, bombs and napalm. Gross weight more than 25,000 lb. Crew 1.

PERFORMANCE: Maximum speed over 650 mph. Service ceiling over 45,000 ft. Rate-of-climb 7500 fpm. Range more than 2000 miles.

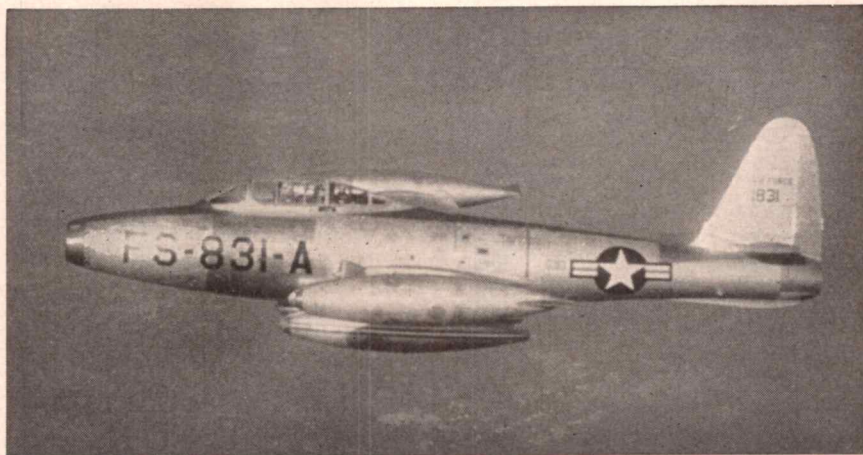
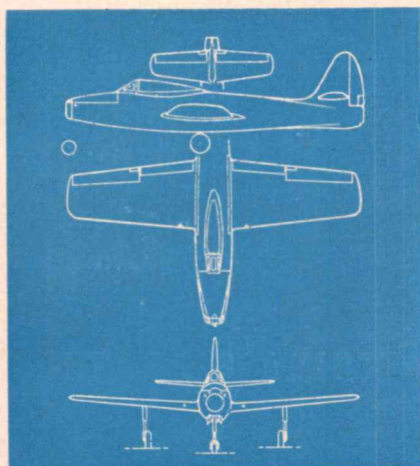
REPUBLIC RF-84F THUNDERFLASH PHOTO-RECON FIGHTER

RF-84F features wing root air inlets to clear nose for various combinations of automatic and remote-control cameras. High speed, high altitude reconnaissance will be possible with the very high performance of the new photo plane. Quantity production alternates on the assembly lines with the F-84F. Modified version operates as parasite in Convair B-36 belly. Manufacturer: Republic Aviation Corporation, Farmingdale, N. Y.

SPECIFICATIONS: Span 33 ft. 6 in.; Length 47 ft. 6 in.; Height 15 ft. Engine Wright J65-W-3, 7200 lb. static thrust. Armament four 0.50-caliber machine guns mounted in wing roots. Gross weight more than 25,000 lb. Crew 1.

PERFORMANCE: Maximum speed over 650 mph. Service ceiling over 45,000 ft. Rate-of-climb 8000 fpm. Range (maximum fuel) 3000 miles.

REPUBLIC F-84G THUNDERJET FIGHTER-BOMBER



Especially designed for ease of access for servicing. The F-84 entered combat in Korea December 7, 1950 and conquered the MIG-15 in numerous actions. Standard USAF fighter-bomber in service. Capable of carrying atomic bomb. 4457 Thunderjets were built in the seven year period ending in mid-1953. Manufacturer: Republic Aviation Corp., Farmingdale, L. I., N. Y.

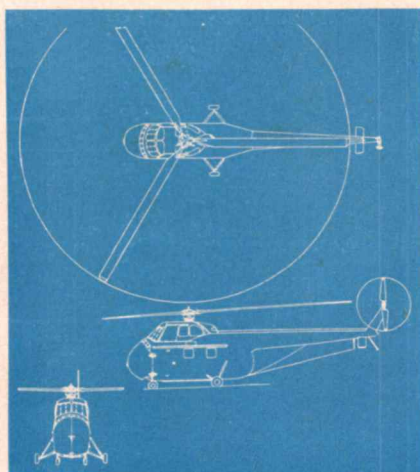
SPECIFICATIONS: Span 36 ft.; Length 38 ft.; Height 12 ft. 6 in.;

Empty weight 11,000 lb.; Gross weight 18,000 lb.; Engine Allison J35-A-29, 5600 lb. static thrust, four 1000-lb. auxiliary JATO units; Fuel 920 gal. external; Armament six .50-cal. machine guns, 32 5-in. HVAR or two 1000-lb. bombs plus 10 5-in. HVAR. Crew 1.

PERFORMANCE: Maximum speed more than 650 mph; Service ceiling more than 45,000 ft.; Combat radius 850 miles normal, more than 1000 miles with four external tanks.

SIKORSKY AIRCRAFT

SIKORSKY H-19D UTILITY



Commercial version, the S-55, in cargo and passenger service in Los Angeles, Miami and New York. Air Force H-19A saw brilliant service in Korea. Pratt & Whitney-powered version is H-19A in USAF, H-19C in USA, HO4S-2 in USCG and HRS-2 in USMC. Wright-powered version is H-19B in USAF, H-19D in USA, HO4S-3 in USCG and HRS-3 in USMC. Manufacturer: Sikorsky Aircraft, Division of United Aircraft Corp., Bridgeport, Conn.

SPECIFICATIONS: Main rotor dia. 53 ft.; Anti-torque rotor dia. 8 ft. 8 in.; Length 42 ft. 2 in.; Height 13 ft. 4 in.; Empty weight 4795 lb.; Gross weight 7200 lb.; Overload gross weight 8,000 lb. Engine Pratt & Whitney R-1340-57, 600 hp at 2250 rpm takeoff; Fuel 185 gal.

PERFORMANCE: Maximum speed 101 mph; Cruise speed 85 mph; Initial rate-of-climb 780 fpm; Service ceiling 11,400 ft.; Range 405 mi.

SIKORSKY HR2S-1 ASSAULT

S-56 commercial model and H-37A Army model. Advanced version, both civil and military, will use two Allison T56 turboprop engines. HR2S-1 carries two Marine squads (26 men) or two jeeps plus crew complement. Commercial version, projected for 1956, will carry 34 passengers in airline service. Rotor and tail fold for carrier stowage, autopilot and anti-icing equipment standard. Clamshell nose doors permit cargo and troop loading. Retractable main landing gear, first on production helicopter. Manufacturer: Sikorsky Aircraft,



Division of United Aircraft Corp., Bridgeport 1, Conn.

SPECIFICATIONS: Rotor dia. 90 ft.; Fuselage length 60 ft.; Gross weight

28,500 lb.; Engine (2) Pratt & Whitney R-2800, derated to 1900 hp.

PERFORMANCE: Maximum speed 156 mph.

SIKORSKY HSS-1 ANTI-SUBMARINE

This single engine, single main rotor helicopter is larger than the Navy's HO4S and Marine HRS. Equipped for extensive submarine detection work, its main piece of equipment is sonar gear which includes an electrical device that may be lowered into the ocean while the helicopter hovers at low altitude. The engine is installed in the nose of the aircraft with clamshell doors which open to give the same ease of maintenance found on the HO4S. Gear is tricycle with the main gear forward. The four all-metal



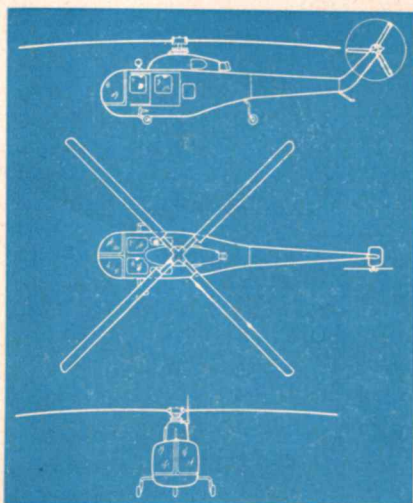
main rotor blades and four-bladed tail rotor can be folded manually for shipboard stowage. The pilot and copilot fly from a position above and slightly back of the engine, while the passenger-cargo area is directly be-

low the main rotor head. The HSS-1 is equipped as a Sikorsky developed autopilot.

SPECIFICATIONS: Engine Wright R-1820, 1425 hp.

PERFORMANCE: All data classified.

SIKORSKY XH-39 UTILITY



The XH-39 set the world's speed record for helicopters when it flew at 156.005 mph over the 3 kilometer course at Windsor Locks, Conn. The world's helicopter altitude record of 24,500 ft. was established on October 17, 1954 with the XH-39. The 81 feet of payload space offers adequate accommodation for three passengers and 100 lbs. of baggage, or two litter patients and a medical attendant, or 800 lbs. of cargo.

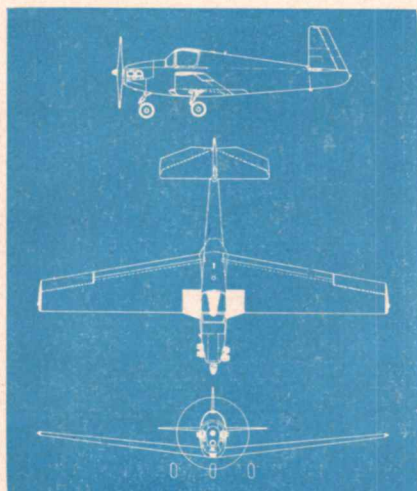
SPECIFICATIONS: Main rotor diameter 35 ft.; Tail rotor diameter 6 ft., 4 in.; Length 30 ft., 3 in.; Height 9 ft., 8 in.; Empty weight 2200 lb.; Gross weight 3560 lb.; Engine Turbomeca Artouste II with maximum power rating 400 hp at 35,000 rpm, continuous power rating 323 hp.

PERFORMANCE: Maximum speed 156.005 mph; Cruise speed 138 mph; Rate of climb 800 fpm; Service ceiling 16,000 ft.; Range 250 mi.

CIVIL

AERO DESIGN and ENGINEERING CO.

AERO DESIGN 560 COMMANDER 5-7 PLACE



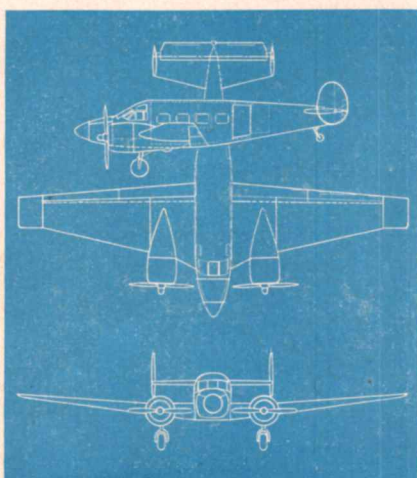
Over 200 Commanders have been produced since 1951, and the Model 560 replaces the 520 on a production line which is turning out 5-8 airplanes per month. In addition to more horsepower, a greater payload and increased cruising speed, the Model 560 incorporates a new heating and ventilating system, a newly-developed dual air induction system, and an improved high-speed generator. The 560 is convertible to cargo in 30 minutes. Manufacturer: Aero Design and Engineering Co., Tulakes Airport, Oklahoma City, Okla.

SPECIFICATIONS: Span 44 ft.; Length 34 ft. 2.5 in.; Height 14 ft.

9 in.; Empty weight 3970 lb.; Gross weight 6000 lb.; Areas wing 242.5 sq. ft.; aileron 20.52 sq. ft.; flap 30.70 sq. ft.; fin 38.20 sq. ft.; rudder 15.40 sq. ft.; stabilizer 33.06 sq. ft.; elevator 20.54 sq. ft.; Engine (2) Lycoming GO 480-B 540 hp; takeoff hp 520; Fuel capacity 145 gal.; Propeller Hartzell; Main tire 8.50 x 10 x 6 ply. **PERFORMANCE:** Maximum speed rated 209 mph at S.L.; Cruising speed 200 mph at 70 percent rated power at 10,000 ft.; Landing speed 59 mph; Rate of climb 1400 fpm at S.L.; Service ceiling 21,900 ft.; Absolute ceiling 22,500 ft.; Range with maximum payload 1048 mi.

BEECH AIRCRAFT CORP.

BEECH SUPER 18 8 PLACE



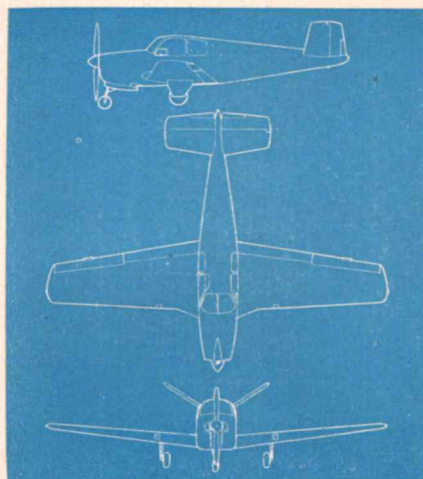
Improved D-18S, the new model features external drag reduction plus numerous internal design and comfort features. Manufacturer: Beech Aircraft Corp., Wichita, Kans.

SPECIFICATIONS: Span 49 ft. 8 in.; Length 35 ft. 2 1/2 in.; Height 9 ft. 6 in.; Empty weight 5970 lb.; Gross weight 9300 lb.; Wing area 361 sq. ft.; Engine (2) Pratt & Whitney

R985AN/14B, 450 hp each at 2300 rpm takeoff; Propeller (2) Hamilton Standard 6531A Hydromatic; Fuel capacity 286 gal.

PERFORMANCE Maximum speed 234 mph at 3300 ft.; Cruising speed 215 mph at 10,000 ft.; Rate of climb 1490 fpm at S.L. (8750 lb. gross weight); Range with maximum payload 1462 mi.

**BEECH F35
BONANZA
4 PLACE**



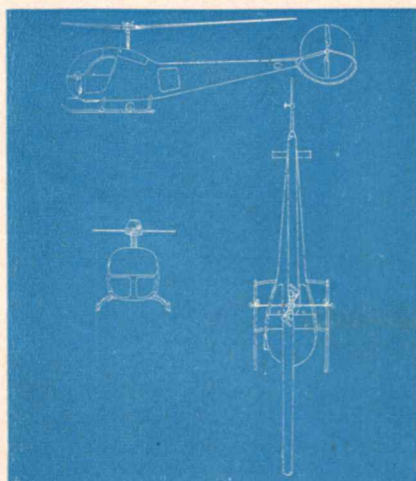
New F35 model features optional engine installation with 225 hp Continental E-225-8 engine providing 9 mph added speed, 200 fpm added rate of climb and 1,000 ft. higher ceiling. New 1955 model has third cabin window providing up to 20 percent more rearward visibility, improved propeller design and new auxiliary wing tanks. Manufacturer: Beech Aircraft Corp., Wichita, Kans. **SPECIFICATIONS:** Span 32 ft. 10 in.; Length 25 ft. 2 in.; Height 6 ft. 6½ in.; Empty weight 1697 lb.; Wing area 177.6 sq. ft.; Engine Continental

E-185-11, 205 hp at 2600 rpm at takeoff, 185 hp at 2300 rpm at S.L. normal rated; Propeller Beech, with aluminum alloy blades, electrically controlled continuously variable pitch; Fuel 39 gal. standard.

PERFORMANCE: Maximum speed 190 mph at S.L.; Cruising speed 175 mph at 65 percent power at 8000 ft.; Rate of climb 1100 fpm; Service ceiling 18,000 ft.; Stalling speed 55 mph; Range 775 mi. on standard fuel, 1180 mi. on 59 gal. fuel supply; Take-off run (20 degree flaps) S.L., 10 mph wind, 590 ft.

BELL AIRCRAFT CORP.

**BELL 47H
EXECUTIVE**



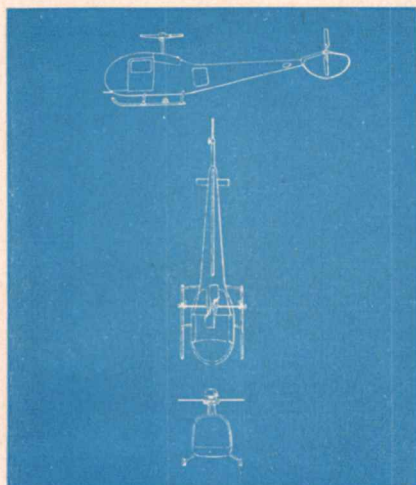
Complete streamlining combined with improved Franklin engine and time-tested Bell dynamic components including rotor and control systems, give this model greatly increased performance over standard Model 47G. Sound-proofed cabin permits normal conversion. Custom interior and kits available. Now in production. Manufacturer: Bell Aircraft Corp., Fort Worth, Texas.

SPECIFICATIONS: Main rotor diam-

eter 35 ft. 1½ in.; Anti-torque diameter 5 ft. 8½ in.; Fuselage length 30 ft. 1¼ in.; Overall length 41 ft. 5 in.; Engine Franklin 6V4 200-C32AB, 200 hp at 3100 rpm; Empty weight 1460 lb.; Gross weight 2350 lb.; Fuel capacity 35 gal.

PERFORMANCE: Maximum speed 100 mph at S.L.; Cruising speed 90 mph at altitude; Rate of climb 830 fpm at design gross; Service ceiling 12,200 ft.; Range 200 mi.

BELL 47J GENERAL PURPOSE



This model is scheduled for production this fall. As executive craft it features room for pilot and three passengers. Rear seat folds easily to make room for cargo. In ambulance service, complete litter kit can be installed for two patients in about five minutes, and conversion to hoist configuration for air-sea rescue requires six minutes. No tools are

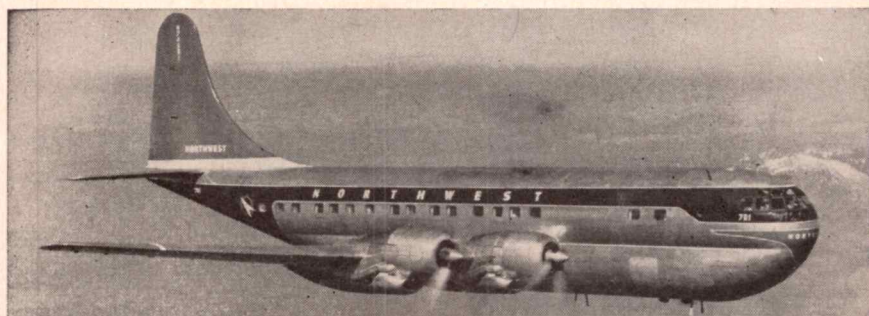
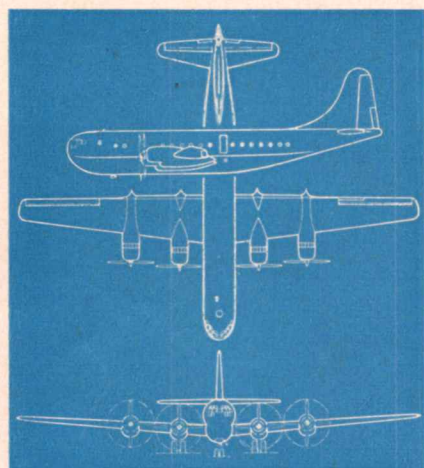
needed for conversions. Manufacturer: Bell Aircraft Corp., Fort Worth, Texas.

SPECIFICATIONS: Main rotor diameter 35 ft. 11½ in.; Anti-torque rotor diameter, 5 ft. 9 in.; Fuselage length, 31 ft. 3¾ in.; Engine Lycoming O-435 (derated).

PERFORMANCE: Data not available.

BOEING AIRPLANE CO.

BOEING 377 STRATOCRUISER TRANSPORT



The Boeing 377 Stratocruiser features sea level cabin pressure up to 15,000 ft. and 5500 ft. equivalent cabin pressure at 25,000 ft. Total of 56 have flown 147,247,736 miles carrying 2,746,222 passengers as of July 1954 on PAA, NWA, UAL and BOAC since 1949. Manufacturer: Boeing Airplane Co., Seattle, Wash.

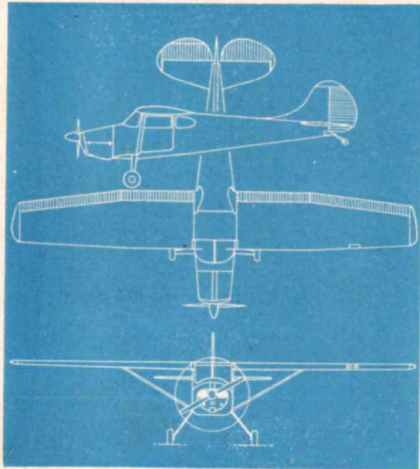
SPECIFICATIONS: Span 141 ft. 3 in.; Length 110 ft. 4 in.; Height 38 ft. 3 in.; Height with tail folded 26 ft. 7 in.; Empty weight 83,500 lb.; Takeoff gross weight 142,500 lb.; Landing gross weight 121,700 lb.; Area wing 1769 sq. ft.; Fuselage 11 ft. wide, 15 ft. 3 in. high; Engine (4) Pratt & Whitney R-4360-TS3-G, 3500 hp at 2700 rpm takeoff water in-

jection, 3250 hp at 2700 rpm dry, 2800 hp at 2550 rpm normal rated, 1900 hp at 2300 rpm cruise; Propeller (4) Curtiss Electric 16 ft. 6 in.; Main tires 56 in. dia.; Nose tires 36 in. dia.; Tread 28 ft. 5.6 in.; Fuel capacity 7790 gal. Passenger and crew 60-75.

PERFORMANCE: Maximum speed 375 mph; Cruising speed 340 mph at 25,000 ft.; Normal operating altitude 12-25,000 ft.; Service ceiling 33,000 ft.; Rate-of-climb 1100 fpm; Stalling speed 93 mph; Range 4600 miles with 5-ton payload, 3550 miles with 10-ton payload and 3000 miles with 25,000-lb. payload; Takeoff CAR field length maximum weight 6250 ft.; Land with reverse propellers 1230 ft.

CESSNA AIRCRAFT COMPANY

CESSNA 170 4 PLACE



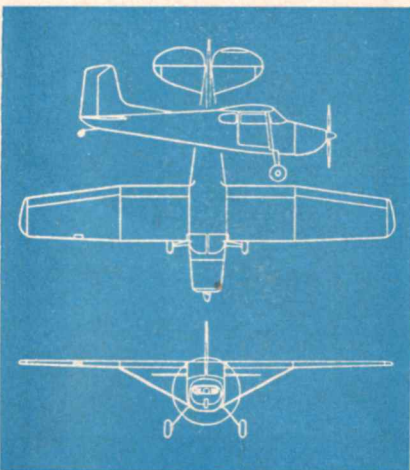
Model features removable rear seat for cargo, recessed panel mountings for eight additional instruments plus two radios without reduction in compartment space. Wide range of optional equipment including skis, floats, cross wind gear, stretcher racks for ambulance use, blind flying hood, spraying equipment and provisions for vertical or oblique aerial photography and mapping. Manufacturer: Cessna Aircraft Co., Wichita, Kans.

SPECIFICATIONS: Span 36 ft.;

Length 25 ft.; Height 6 ft. 7 in.; Wing area 175 sq. ft.; Engine Continental C-145-2, 145 hp at 2700 rpm at takeoff, 105 hp at 2410 rpm cruising; Propeller Sensenich 6 ft. 1 in.; Empty Weight 1185 lb.; Gross Weight 2200 lb.; Main tire 6.50 x 6.

PERFORMANCE: Maximum speed 140 mph; Cruising speed 120 mph; Stalling speed 53 mph; Rate-of-climb 690 fpm; Service ceiling 15,500 ft.; Range 640 miles.

CESSNA 180 4 PLACE



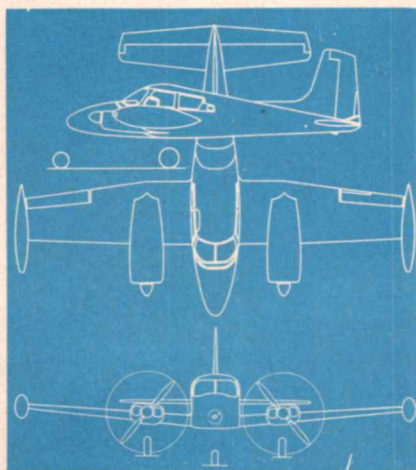
New model 180 features added sound proofing and engine changes reducing noise, new outside baggage compartment access, sloping map compartment, adjustable horizontal stabilizer and numerous internal refinements. New model is in quantity production. Manufacturer: Cessna Aircraft Company, Wichita, Kans.

SPECIFICATIONS: Span 36 ft.;

Length 26 ft.; Height 7 ft. 6 in. Empty weight 1480 lb.; Gross weight 2550 lb. Engine Continental O-470-J, 225 hp at 2600 rpm. Propeller Hartzel 7 ft. 4 in. dia. Fuel 60 gal.

PERFORMANCE: Maximum speed 165 mph; Cruising speed 150 mph; Stalling speed 64 mph. Service ceiling 19,800 ft. Rate-of-climb 1150 fpm. Endurance 4½ hours.

CESSNA 310
5 PLACE



Features wingtip fuel tanks, exhaust augments tubes, fully-enclosed retractable tricycle gear, completely internal antennae. Now in quantity production. Manufacturer: Cessna Aircraft Co., Wichita, Kans.

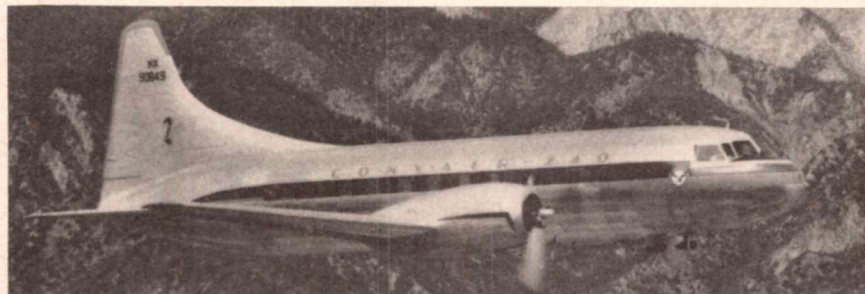
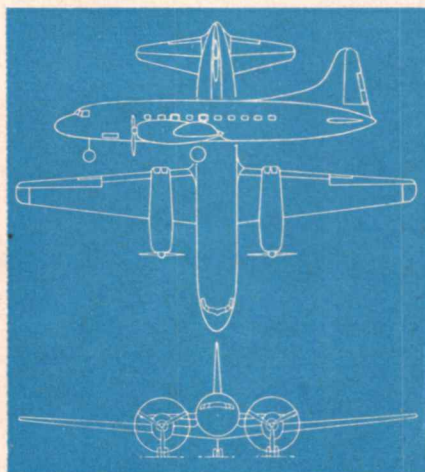
SPECIFICATIONS: Span 35 ft.; Length 27 ft.; Height 10 ft. 6 in.; Engine (2) Continental O-470-B, 240 hp at 2600 rpm; Fuel capacity 100

gal. (two 50-gal. tip tanks); Empty weight 2850 lb.; Gross weight 4600 lb.

PERFORMANCE: Maximum speed 220 mph at sea level; Cruising speed 205 at 70% power at 8000 ft.; Initial rate-of-climb 1700 fpm at full gross weight; Service ceiling 20,000 ft. at full gross weight; Ceiling 7500 ft. at full gross; Range 1,000 mi. at 50% power.

CONVAIR, DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR 240
LINER
TRANSPORT



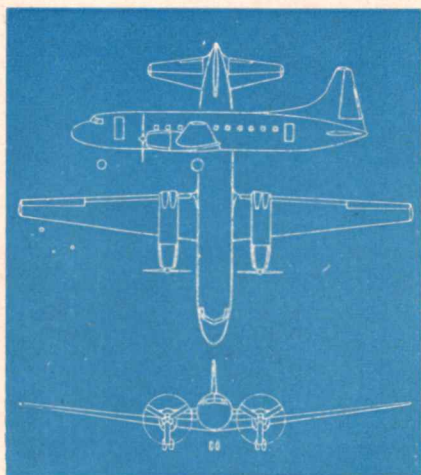
Jet exhaust system provides 10-12 mph additional speed. Integral stairway on right side of fuselage nose expedites passenger service. Reversible propellers shorten landing run, aid ground maneuvering. Cabin is pressurized and air conditioned. More than 30 airlines are flying Convair-Liner 240's and 340's. Manufacturer: Convair, Division of General Dynamics Corp., San Diego, Calif.

SPECIFICATIONS: Span 91 ft. 9 in.; Length 74 ft. 8 in.; Height 26 ft. 11 in.; Areas wing 817 sq. ft.; ailerons 44 sq. ft.; flaps 140 sq. ft.; fin 84.4

sq. ft.; rudder 41 sq. ft.; stabilizer 173.7 sq. ft.; elevator 59 sq. ft.; Empty weight 30,345 lb.; Gross weight 41,790 lb.; Engine (2) Pratt & Whitney R-2800-CA-18, 2400 hp takeoff; Propeller (2) Hamilton Standard or Curtiss Electric; Fuel 1550 gal.; Main tire 34 x 9.9; Nose tire 26 x 6; Electrical system 24-28-v d.c.; Passengers and crew 40.

PERFORMANCE: Maximum speed 347 mph at 16,000 ft.; Cruising speed 272 mph at 16,000 ft.; Landing speed 99 mph; Service ceiling 26,200 ft.; Rate-of-climb 1520 fpm.

CONVAIR 340 LINER TRANSPORT



Specifically designed for greatly increased range plus four additional passengers. Loading door with integral steps on port side of forward cabin, cargo space forward of passenger compartment; two degrees additional dihedral, engine nacelles moved forward 7 in.; larger tires, longer shock struts. Total of 715 military and commercial planes based on design of Convair Liner have been delivered. Manufacturer: Convair, Division of General Dynamics Corp., San Diego, Calif.

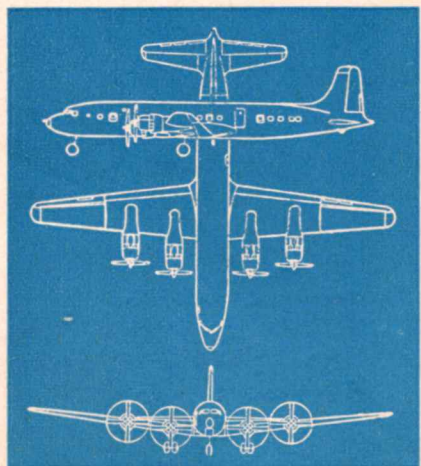
SPECIFICATIONS: Span 105 ft. 4 in.; Length 79 ft. 2 in.; Height 28 ft. 2 in.; Empty weight 29,486 lb.;

Gross weight 47,000 lb.; Wing area 920 sq. ft.; Engine (2) Pratt & Whitney R-2800-CB16, 2400 hp at 2800 rpm at takeoff with water injection, 2050 hp at 2700 rpm at takeoff dry; Propeller (2) Hamilton Standard 13 ft. 6 in.; Fuel 1750 gal.; Passengers and crew 44.

PERFORMANCE: Maximum speed 314 mph at 16,000 ft.; Cruising speed 292 mph at 1350 hp per engine with 7700-lb. payload over 1000 miles; Cruising speed 288 mph with 10,000 lb. payload over 500 miles at 20,000 ft.; CAR takeoff runway length 4675 ft.

DOUGLAS AIRCRAFT CO. INC.

DOUGLAS DC-6B PASSENGER TRANSPORT



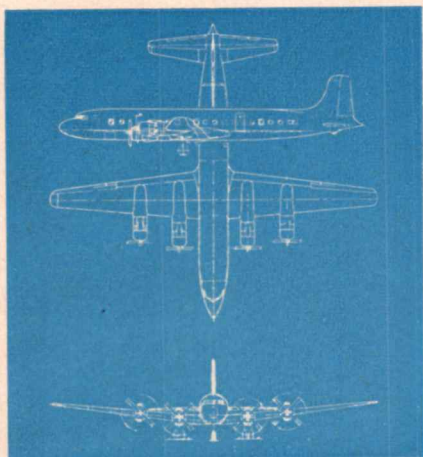
Passenger version of the lengthened DC-6A Liftmaster, the DC-6B accommodates 44 passengers in a luxury version but as high as 89 in its air coach version. Navy uses as R6D-1, USAF operates as C-118A. Manufacturer: Douglas Aircraft Company, Santa Monica, Calif.

SPECIFICATIONS: Span 117 ft. 6 in.; Length 106 ft. 6 in.; Height 28 ft. 8 in.; Area wing 1463 sq. ft.; ailerons 89 sq. ft.; flaps 229.4 sq. ft.; fin 93.4 sq. ft.; rudder 49 sq. ft.; stabilizer 210.9 sq. ft.; elevator 108.9 sq. ft.; Empty weight 58,340 lb.; Gross weight 107,000 lb.; Engine (4) Pratt

& Whitney R-2800-CB17, 2500 hp at 2800 rpm at takeoff with water injection, 2050 hp at 2700 rpm at takeoff dry, 1900 hp normal rated; Propellers (4) Hamilton Standard full-feathering reversible-pitch; Fuel 5512 gal.; Main tire 15.50 x 20; Nose tire 44 in.; Electrical system 24-28-v d.c.; Cargo 970 cu. ft. Passengers and crew 92.

PERFORMANCE: Maximum speed 370 mph at 20,500 ft.; 318 mph at sea level; Cruising speed 323 mph at 22,700 ft.; Rate-of-climb 1020 fpm; Service ceiling 27,000 ft.; Range 4970 mi. max.

DOUGLAS DC-7 TRANSPORT



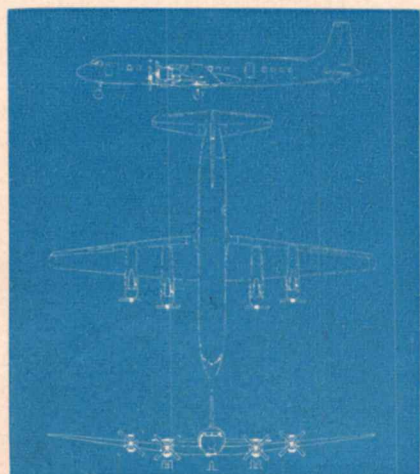
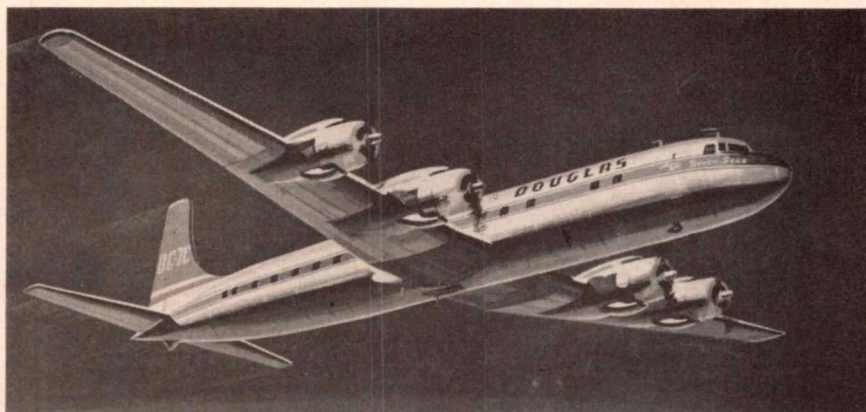
Latest development of DC-4—DC-6 transport model, the new DC-7 provides greatly increased capacity and performance through use of powerful turbo compound engines. Fuselage lengthened to accommodate additional passenger seats or cargo volume. Inaugural transcontinental non-stop scheduled airline service Nov. 29, 1953. Manufacturer: Douglas Aircraft Company, Santa Monica, Calif.

SPECIFICATIONS: Span 117 ft. 6 in.; Length 108 ft. 11 in.; Height 28 ft. 7 in.; Area wing 1463 sq. ft.; aileron 85 sq. ft.; flap 228 sq. ft.; fin

101 sq. ft.; rudder 67 sq. ft.; stabilizer 156 sq. ft.; elevator 155 sq. ft.; Empty weight 88,250 lb.; Gross weight 126,000 lb.; Engine (4) Wright R-3350 turbo compound, 3250 hp for take-off; Propeller (4) Hamilton Standard 13 ft. 6 in. dia.; Fuel 6490 gal.; Maximum cargo volume 1171 cu. ft. and capacity 19,730 lb.; 95 passengers.

PERFORMANCE: Maximum speed 405 mph at 22,100 ft.; Cruise 359 mph at 24,300 ft.; Rate-of-climb 1673 fpm; Service ceiling 28,400 ft.; Range 4490 miles with maximum fuel load.

DOUGLAS DC-7C TRANSPORT



DC-7C, a larger version of earlier planes in this series, is especially designed for long-range, intercontinental airline service. Popularly called the "Seven Seas," this plane is capable of flying non-stop between most cities of Europe and the United States. The DC-7C has ten feet greater wing span, forty-inch longer fuselage and two-feet taller vertical tail structure than previous models. Production is concurrent with preceding models of the DC-6/7 series. Manufacturer: Douglas Aircraft Company, Santa Monica, Calif.

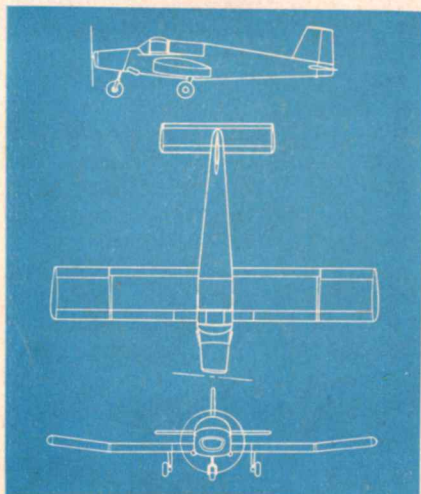
SPECIFICATIONS: Span 127 ft. 6 in.; Length 108 ft. 51 in.; Height 30 ft. 9 in.; Empty weight 72,515 lb.; Gross

weight 139,000 lb. Area wing 1637 sq. ft.; aileron 93.4 sq. ft.; flap 270.6 sq. ft.; fin 109 sq. ft.; rudder 73 sq. ft.; stabilizer 156 sq. ft.; elevator 155 sq. ft.; Engine Wright Compound 988TC18EA1 with 3400 hp; Fuel capacity 7860 gal.; Propeller 34E60 with 6921 blades; Main tire 17:00 x 20; Nose tire 44 in.

PERFORMANCE: Maximum speed 396 mph at 2450 hp at 2600 rpm at 22,700 ft.; Cruising speed 359 mph at 1800 hp at 2400 rpm at 24,400 ft.; Landing speed 118 mph; Rate of climb 1685 fpm at S. L.; Service ceiling 28,000 ft.; Absolute ceiling 29,200 ft.; Range with maximum payload 4585 mi.

FLETCHER AVIATION CORP.

FLETCHER FU-24 UTILITY



Single engine, low-wing monoplane is lightweight, all aluminum and an exceptional load-lifter. Incorporating maximum in safety features, is designed for seeding, spraying, dusting and fertilizing operations, or as a flying $\frac{3}{4}$ ton pick-up. Manufacturer: Fletcher Aviation Corp., Rosemead, Calif.

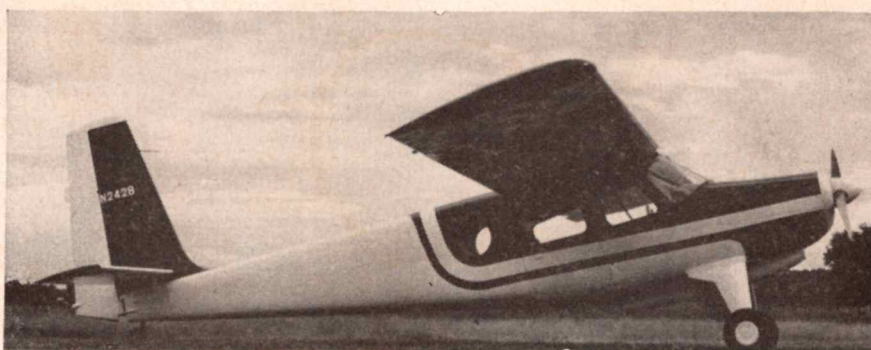
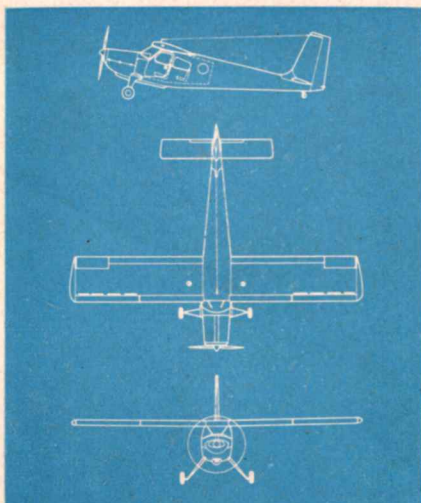
SPECIFICATIONS: Span 42 ft.; Length 31 ft. 10 in.; Height 9 ft. 4 in.; Empty weight 1909 lb.; Gross weight 3500 lb.; Areas wing 294 sq.

ft. aileron 9.3 sq. ft.; flap 17.0 sq. ft.; fin 12.0 sq. ft.; rudder 12.5 sq. ft.; stabilizer 43.1 sq. ft.; elevator 4.9 sq. ft.; Engine Continental 047OE, 225 hp; Fuel capacity 40 gal. Propeller Hartzell (Constant speed) Main tire 8.50 x 6; Nose tire 8.50 x 6.

PERFORMANCE: Maximum speed 124 mph; Cruising speed at 75 per cent power at S.L. at 3500 lb. gross weight 108 mph; Rate of climb at S. L. 750 fpm; Service ceiling 15,700 ft. Range 370 mi.

HELIO AIRCRAFT CORP.

HELIO H-391B COURIER MONOPLANE



All-metal construction, full span automatic slats, high-lift slotted flap 74 percent of span. Nose-wheel positioned main landing gear, special over-strength cabin structure. Temporarily certificated at 2800 lbs, gross weight, pending CAA interpretation of non-spinnable aircraft certification as applied to this aircraft. Positive, prompt roll control at all airspeeds and attitudes, including minimum 26 knot speed. Manufacturer: Helio Aircraft Corp., Norwood, Mass.

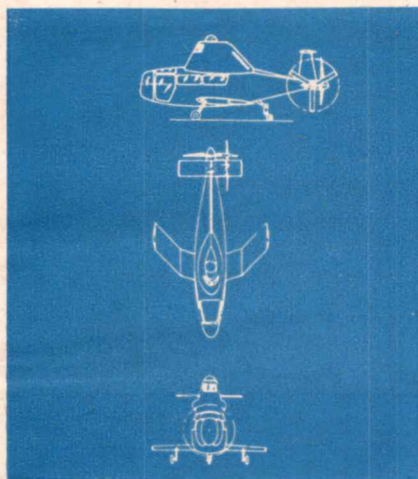
SPECIFICATIONS: Span 39 ft.; Length 30 ft.; Height 8 ft., 10 in.;

Empty weight 1920 lb.; Gross weight 2800 lb.; Overload gross weight 3500 lb.; Areas wing 231 sq. ft.; aileron 20.7 sq. ft.; flap 38.2 sq. ft.; fin 15.7 sq. ft.; rudder 37.5 sq. ft.; stabilizer 37.5 sq. ft.; Engine Lycoming GO-435-C2B rated 260 hp takeoff; Fuel capacity 60 gals.; Propeller Hartzell.

PERFORMANCE: Maximum speed 157 mph at 172 hp at 300 rpm at 8500 ft.; Landing speed 29.2 mph; Rate of climb 1100 fpm at 2000 ft.; Service ceiling 25,600 ft.; Range with maximum fuel load 520 mi.

JACOBS AIRCRAFT ENGINE CO.

JACOBS 104 CONVERTIPLANE

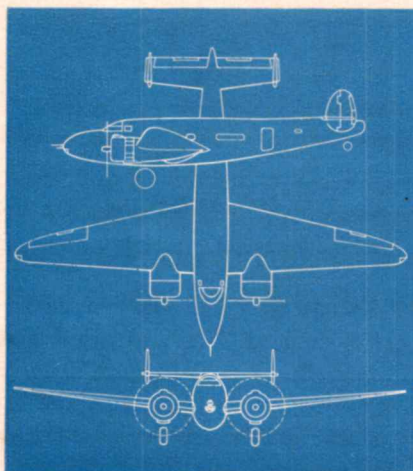


Heart of the new machine is the Jacobs engine-transmission unit which is factory built and packaged as a single unit. The 104 has the anti-torque rotor and pusher propeller intermeshing at a 90 deg. angle. The propeller can be placed in high pitch and utilize most of the engine's power for forward flight. The rotor blades are made from 61ST aluminum alloy extrusion. Swept wing provides approx. 30 percent of the total lift and, with collective pitch control locked,

the machine is operated with cyclic stick and rudder pedals like a normal airplane. Manufacturer: Jacobs Aircraft Engine Co., Pottstown, Penna.
SPECIFICATIONS: Rotor dia. 36 ft.; Fuselage length 22 ft.; Height 10 ft. 10 in.; Empty weight 2350 lb.; Gross weight 3475 lb.; Engine Jacobs R-755EH, 350 hp.; Fuel 50 gal.
PERFORMANCE: Maximum speed 175 mph; Cruising speed 157 mph; Best rate-of-climb (vertical) 1400 fpm; Range 300 mi.

LEAR, INCORPORATED

LEARSTAR EXECUTIVE



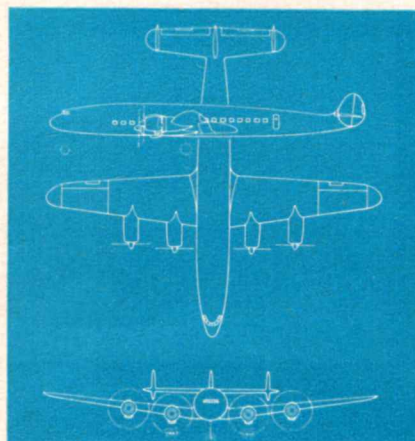
Lockheed Model 18-56 Lodestar re-designed and converted to provide, as an executive airplane, performance and accommodations comparable to modern airliners: meets CAR Part 4b performance requirements and is CAA-certificated in Transport Category. Designed specifically for business use. Now in quantity production. Manufacturer: Lear, Inc., Santa Monica, Calif.
SPECIFICATIONS: Span 65 ft. 6 in.; Length 51 ft.; Height 11 ft. 9 in.; Wing area 551 sq. ft.; Empty weight 15,300 lbs.; Gross weight 22,500 lbs.;

Engine (2) Wright R-1820-C9HD, 1425 hp take-off; Propeller Hamilton Standard Hydromatic, Model 33D50, three blades, automatic full feathering, diameter 10 ft. 6 in.; Fuel 1124 gal.

PERFORMANCE: Maximum speed 321 mph; Cruising speed 280 mph at 55 percent power; Stalling speed 86.7 mph; Rate-of-climb 1710 fpm; Maximum range 3800 miles; Service ceiling at full gross weight 26,700 ft.; Single-engine service ceiling at full gross weight 10,800 ft.

LOCKHEED AIRCRAFT CORP.

LOCKHEED 1049 CONSTELLATION PASSENGER TRANSPORT



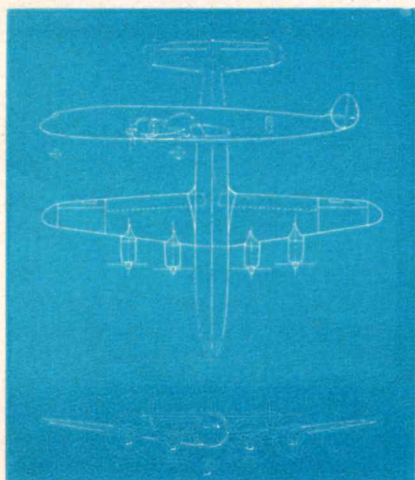
Regular domestic passenger version with standard Wright Cyclone engines, the 1049 is in service on Eastern and Trans World airlines. These models may be easily converted to turbo compound engines at a later date. Manufacturer: Lockheed Aircraft Corp.; Burbank, Calif.

SPECIFICATIONS: Span 123 ft.; Length 113 ft. 7 in.; Height 24 ft. 9 in. Empty weight 68,642 lb.; Gross weight 120,000 lb. Engine (4) Wright

956C18CA1, 2700 hp at 2900 rpm at takeoff. Fuel capacity 6550 gal. Cargo capacity 715 cu. ft.; Floor area 744 sq. ft. Passengers 66-88.

PERFORMANCE: Maximum speed 346 mph at 17,500 ft.; Cruising speed 327 mph at 21,500 ft. Take-off distance to clear 50-ft. obst. 5200 ft. at sea level at full gross weight. Rate-of-climb 1050 fpm. Maximum range 5200 miles at 10,000 ft.

LOCKHEED 1049G CONSTELLATION PASSENGER TRANSPORT



Now on order by U.S. and international airlines, U.S. Navy (R7V-1), U. S. Air Force (C-121B). Infinite variety of internal arrangements available, including famed Dreyfus-styled luxury passenger interior. Other models include Navy R7V-2 with P&W T34 turboprop engines and USAF YC-121F. Manufacturer: Lockheed Aircraft Corp., Burbank, Calif.

SPECIFICATIONS: Span 123 ft.; Length 113 ft. 7 in.; Height 24 ft. 9 in. Empty weight 73,016 lb.; Gross

weight 137,500 lb. Engine (4) Wright 972TC18DA3, 3250 hp at 2900 rpm at takeoff. Fuel capacity 7750 gal. plus provision for 2600 gal. tip tanks. Cargo capacity 728 cu. ft.; Floor area 744 sq. ft. Passengers 63-99.

PERFORMANCE: Maximum speed 370 mph at 20,000 ft.; Cruising speed 355 mph at 22,600 ft. Takeoff distance to clear 50-ft. obst. 6630 ft. at sea level at full gross weight. Rate-of-climb 795 fpm engine out. Maximum range 5840 miles.



A New Standard in Air Travel

Trans-Canada Air Lines are operating
the Rolls-Royce propeller turbine powered

VICKERS VISCOUNT AIRLINERS

into New York, Chicago, Cleveland and Detroit.

Capital Airlines have ordered
a fleet of these airliners for domestic services.

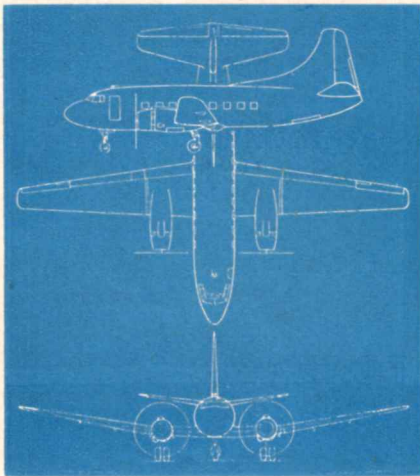
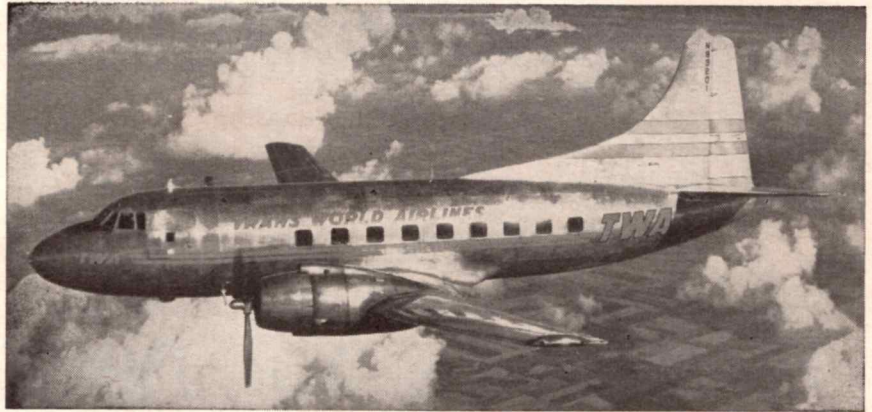
ROLLS-ROYCE DART propeller turbine engines

FOR SPEED AND RELIABILITY

ROLLS-ROYCE LIMITED . DERBY . ENGLAND

THE GLENN L. MARTIN CO.

MARTIN 2-0-2A PASSENGER TRANSPORT



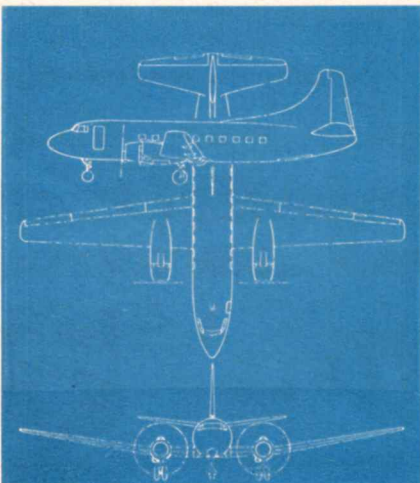
Differs from the standard 2-0-2 model only in small changes in cabin interior, increased gross weight, increased fuel capacity and slightly different engine. Manufacturer: The Glenn L. Martin Co., Baltimore, Maryland.

SPECIFICATIONS: Span 93 ft. 3 in.; Length 71 ft. 4 in.; Height 28 ft. 5 in.; Areas wing 864 sq. ft.; ailerons 41.8 sq. ft.; flaps 150 sq. ft.; fin 70 sq. ft.; rudder 39.7 sq. ft.; stabilizer

210 sq. ft.; elevator 49 sq. ft.; Empty weight 26,211; Gross weight 42,750 lb.; Engine (2) Pratt & Whitney R-2800-CB-16, 2400 hp for takeoff; Fuel 1350 gal.; Main Tire 12.50 x 16; Nose Tire 9.50 x 16; Electrical system 24-28-v d.c. plus 115-v 400-cycle a.c. system.

PERFORMANCE: Maximum speed 312 mph at 14,500 ft.; Cruising speed 280 mph at 12,000 ft.; Rate-of-climb 1790 fpm; Service ceiling 24,300 ft.

MARTIN 4-0-4 PASSENGER TRANSPORT



Eastern and TWA have 100 model 4-0-4 transports in service. Differs from standard 2-0-2 in 39-in. additional fuselage length and increased passenger capacity from 36 to 40. Plane is stressed for eventual turbo-prop power. Manufacturer: The Glenn L. Martin Co., Baltimore, Maryland.

SPECIFICATIONS: Span 93 ft. 3 in.; Length 74 ft. 7 in.; Height 28 ft. 5 in.; Empty weight 29,486 lb.; Gross weight 45,000 lb.; Engine (2) Pratt & Whitney R-2800-CB-16, 2400 hp at takeoff; Fuel 1700 gal.; Propeller (2)

Hamilton Standard full-feathering, reverse-pitch, 13 ft. 1 in.; Areas wing 864 sq. ft.; Aileron 41.8 sq. ft.; flaps 150 sq. ft.; fin 70 sq. ft.; rudder 39.7 sq. ft.; Stabilizer 210 sq. ft.; elevator 49 sq. ft.; Main tire 12.50 x 16; Nose tire 9.50 x 16; Electrical system 24-28-v d.c. and 115-v 400-cycle a.c. systems. Passengers 40.

PERFORMANCE: Maximum speed 312 mph at 14,500 ft.; Cruising speed 280 mph at 18,000 ft.; Rate-of-climb 1790 fpm; Service ceiling 27,300 ft.; Range 800 miles.

Tests for Determining Mechanical Properties of Alloy Steels

This is the sixth of a series of advertisements dealing with basic facts about alloy steels. Though much of the information is elementary, we believe it will be of interest to many in this field, including men of broad experience who may find it useful to review fundamentals from time to time.

The types of tests used to evaluate the mechanical properties of an alloy steel depend upon the end use of the steel involved. Generally speaking, mechanical properties are determined by tension, bend, and hardness tests, and by a group of special tests employed on tubular and wire products. These are discussed briefly in the following paragraphs.

(1) Tension tests provide means of determining tensile strength, yield point, yield strength, proof stress, proportional limit, per cent elongation, and per cent reduction of area. This sort of test subjects the steel to stresses resulting from the application of an axial tensile load to the specimen ends, the load being sufficient to rupture the specimen.

(2) Bend tests often aid in determining the ductility of steel. The severity of such a test depends largely upon the bending radius used. Several factors influence the length of radius, including thickness of the test specimen, width of test specimen, direction of test, chemical composition, tensile strength of specimen, etc.

(3) Hardness tests determine the steel's resistance to penetration. This characteristic is most commonly measured by the Brinell Test or the Rockwell Test. In the former, pressure is applied to the surface of a test specimen by means of a ball 10 mm in diameter. Two diameters of the resulting impression are measured and averaged, the average being used to determine

the hardness number by means of a conversion table. In the Rockwell Test, the degree of hardness is read on a gage; hardness is measured by the penetration of a diamond point or a $\frac{1}{16}$ -in. steel ball. Rockwell "C" scale readings are used in connection with the diamond point; "B" scale in connection with the steel ball. The "C" and "B" are the most commonly used of the several Rockwell scales.

(4) Special additional tests are often made on tubular and wire products. These include such items as hydrostatic and manipulating tests, and torsion and wrapping tests, the latter two being used only with wire.

The subject of testing and its relationships to the end uses of alloy steels has been given broad study by Bethlehem metallurgists. If you desire, they will be glad to discuss any phase of it with you, and also give unbiased opinions on such matters as analysis, proper selection of steels, machinability, etc. Call for their services at any time.

And when in the market for alloy steels, remember that Bethlehem can furnish the entire range of AISI standard analyses, as well as special-analysis steels and all carbon grades. Your inquiries will be welcomed.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM *ALLOY* STEELS



MOONEY AIRCRAFT, INC.

MOONEY M-18C MITE SINGLE SEAT

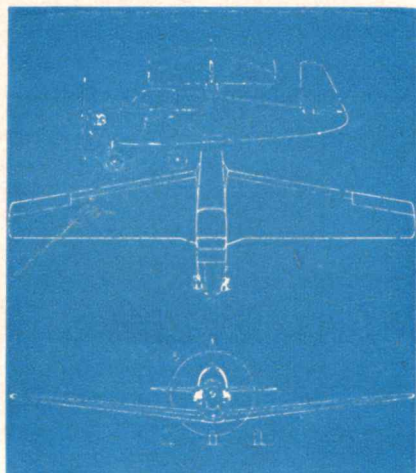


Single-seat Mite offers low flying costs at less than a penny a mile. Manufacturer: Mooney Aircraft Inc.; Kerrville, Tex.

SPECIFICATIONS: Span 26 ft. 10½ in.; Length 17 ft. 8 in.; Height 6 ft. 3¼ in.; Wing area 95.05 sq. ft.; Empty weight 560 lb.; Gross weight 850 lb.; Engine Continental A65-8, 65 hp at 2550 rpm at takeoff, 49 hp

at 2300 rpm cruise power; Propeller Flottorp 65A66, Main tire 400 x 4; Fuel 16 gal.; Baggage 40 lb.

PERFORMANCE: Maximum speed 142 mph; Cruising speed 130 mph at 10,000 ft.; Landing speed 43 mph; Rate-of-climb over 1,000 fpm; Service ceiling 20,000 ft.; Takeoff over 50-ft. obstacle 525 ft.; Maximum range 610 miles.



MOONEY MARK 20 4 PLACE

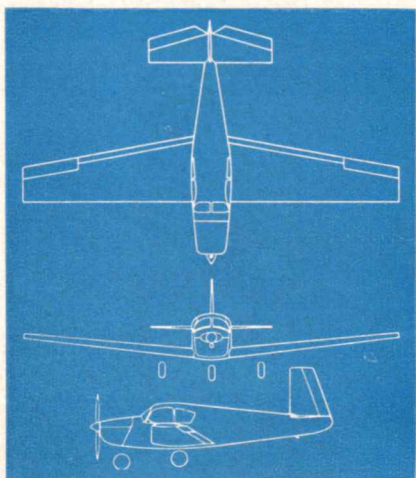


Another super-economical Mooney design, this new four-placer employs an NACA laminar flow wing profile. It is stressed to take increasingly powerful engines and to grow in luxury and performance through the years. Manufacturer: Mooney Aircraft, Inc., Kerrville, Tex.

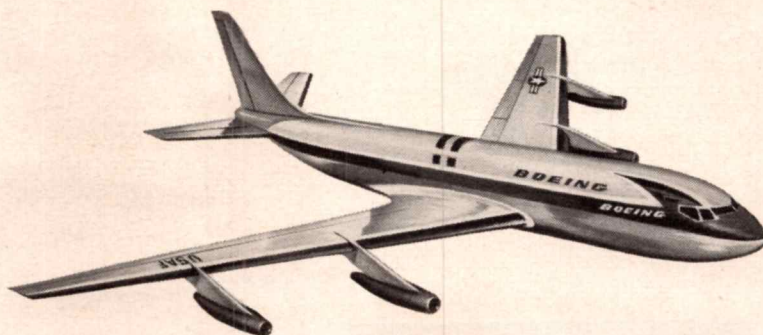
SPECIFICATIONS: Span 35 ft.; Length 23 ft. 2 in.; Height 8 ft. 4½ in.; Empty weight 1335 lb.; Gross weight 2450 lb.; Areas wing 166.93 sq. ft.; aileron 11.06 sq. ft.; flap 17.18 sq. ft.; fin 7.88 sq. ft.; rudder 5.01 sq. ft.; stabilizer 21.5 sq. ft.;

elevator 12.02 sq. ft.; Engine Lycoming O-320, 150 hp; Fuel capacity 50 gal.; Propeller Hartzell constant speed; Main tire 600 x 6; Nose tire 500 x 5.

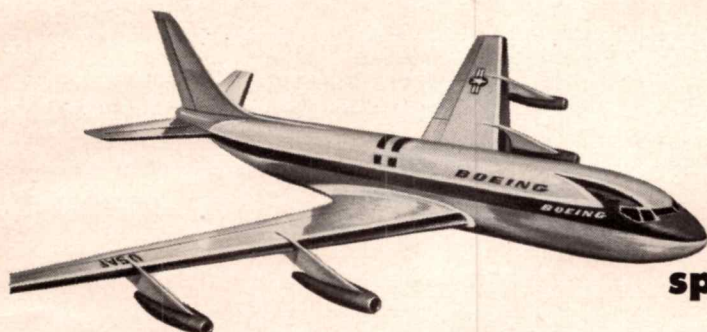
PERFORMANCE: Maximum speed 175 mph at 150 hp at 2700 rpm at S.L.; Cruising speed 170 mph at 112 hp at 2450 rpm at 7,000 ft.; Landing speed 50 mi.; Rate of climb 950 fpm at S.L.; Service ceiling 18,000 ft.; Absolute ceiling 20,000 ft.; Range with maximum load 1,000 ft.; Range with maximum fuel load 1,000 ft.



**For America's first
jet tanker-transport
fleet...**

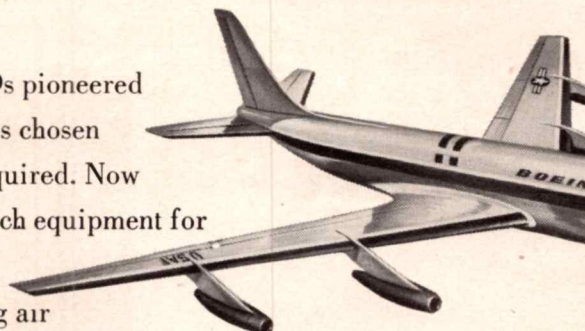


AIR CONDITIONING by AiRESEARCH!



**Boeing solves cabin
comfort problems at
new high altitudes and
speeds for transports with
complete AiResearch systems**

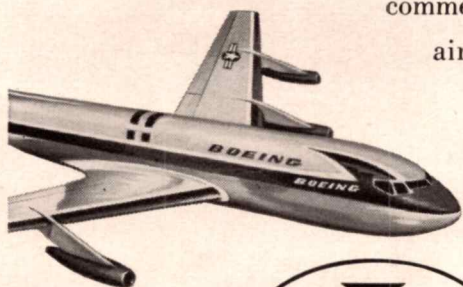
History repeats. When Boeing B-29s pioneered heavy bomber flying at high altitudes, AiResearch was chosen to supply the cabin-conditioning equipment required. Now Boeing has again selected AiResearch equipment for its sleek new KC135s.



AiResearch has unmatched experience in developing air conditioning equipment for the majority of present day

commercial and military aircraft. It has produced more complete air-conditioning and pressurization systems and components than all other manufacturers put together.

Once more a leading manufacturer confirms that where proved designs, reliability and high performance are required, AiResearch is the choice in its field.



THE GARRETT CORPORATION

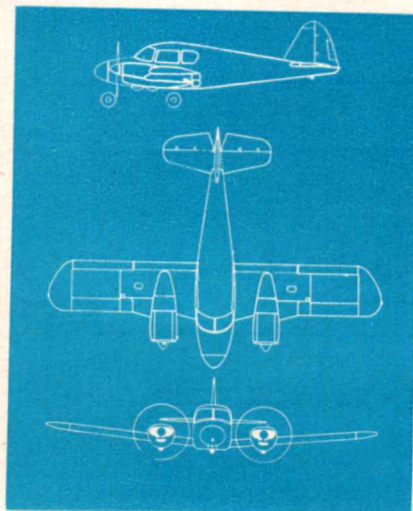
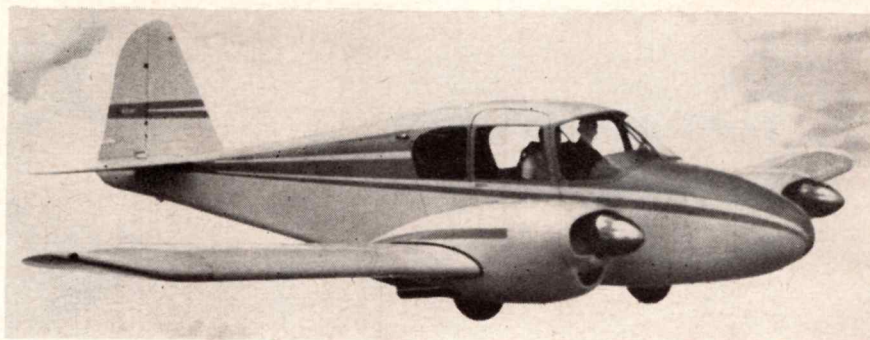
AiResearch Manufacturing Divisions

Los Angeles 45, California • Phoenix, Arizona

Designers and manufacturers of aircraft components: REFRIGERATION SYSTEMS • PNEUMATIC VALVES AND CONTROLS • TEMPERATURE CONTROLS

CABIN AIR COMPRESSORS • TURBINE MOTORS • GAS TURBINE ENGINES • CABIN PRESSURE CONTROLS • HEAT TRANSFER EQUIPMENT • ELECTRO-MECHANICAL EQUIPMENT • ELECTRONIC COMPUTERS AND CONTROLS

**PIPER PA-23
APACHE
4 PLACE**



New Piper twin is all-metal design with short takeoff and slow landing speed for operation from small airports. It is capable of maintaining altitude at full gross weight on one engine. Now in quantity production. Manufacturer: Piper Aircraft Corp., Lock Haven, Penna.

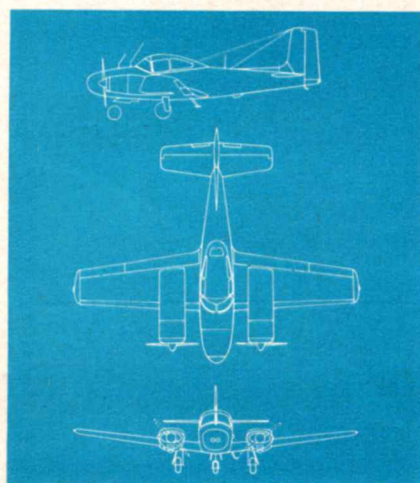
SPECIFICATIONS: Span 37 ft.; Length 27 ft. 2 in.; Height 9 ft. 6 in.;

Wing area 204 sq. ft.; Empty weight 2180 lb.; Gross weight 3500 lb.; Engine (2) Lycoming O-320, 150 hp at 2700 rpm; Fuel 72 gal.; Oil 4 gal.; Baggage 200 lb.

PERFORMANCE: Maximum speed 180 mph.; Cruising speed 170 mph.; Landing speed 52 mph.; Rate of climb 1350 fpm.; Absolute ceiling 20,000 ft.

TEMCO AIRCRAFT CORP.

**RILEY '55
4 PLACE**



The Riley '55, a more powerful and versatile version of the Riley twin-engine conversion of the Ryan Navion, was introduced in 1954. To date, 50 of the twin-engine conversion planes have been delivered from TEMCO's Greenville center. Manufacturer: Temco Aircraft Corp., Dallas, Tex.

SPECIFICATIONS: Span 33 ft. 4 1/2 in.; Length 27 ft. 2 in.; Height 9 ft. 6 1/2 in.; Empty weight 2350 lb.; Gross

weight 3600 lb.; Engine (2) Lycoming O340 170 hp at 2700 rpm takeoff; Wing area 178.3 sq. ft.; Fuel capacity 106 gal.; Propeller Hartzell constant speed; Starter and generator Delco.

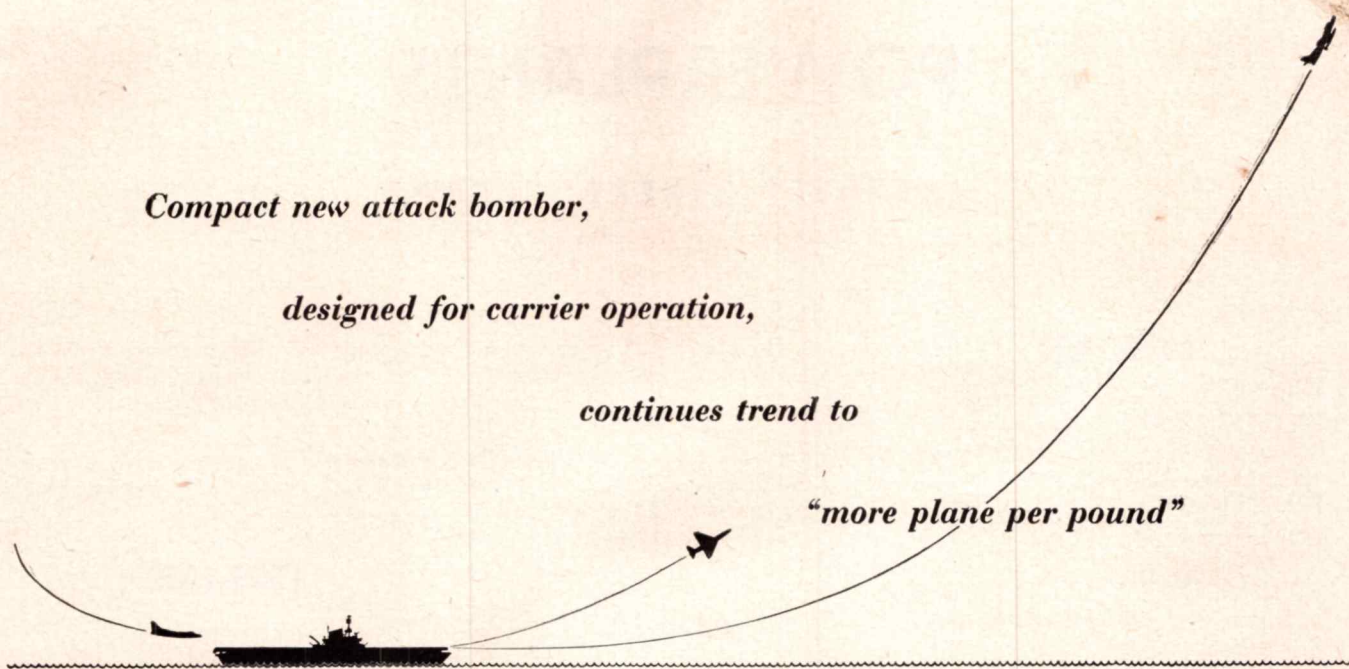
PERFORMANCE: Maximum speed 180 mph; Cruising speed 170 mph; Initial rate of climb 1400 fpm; Service ceiling 20,000 ft.; Range 1200 mi. with normal fuel.

Compact new attack bomber,

designed for carrier operation,

continues trend to

"more plane per pound"



—the U. S. Navy's Douglas A4D Skyhawk

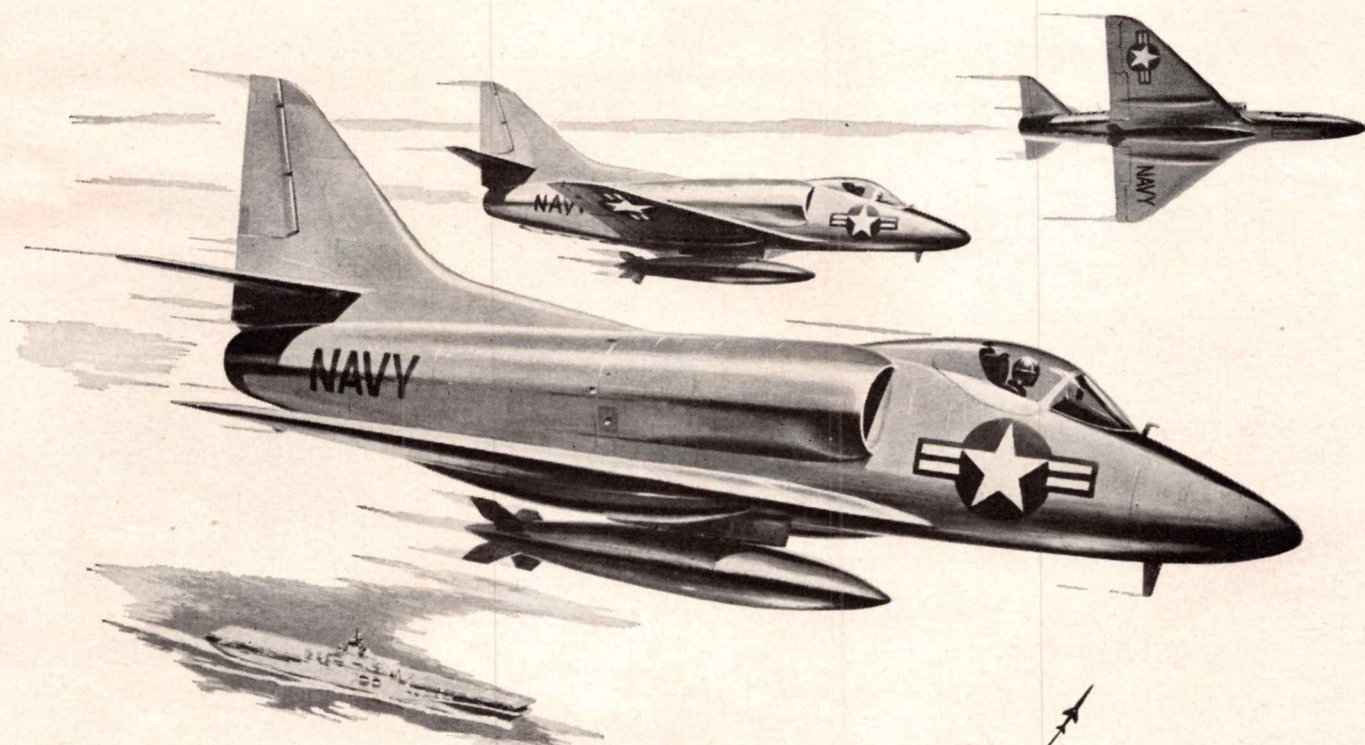
Continuing a growing trend, the Douglas A4D attains maximum efficiency—at lower production cost—through highly simplified design.

Faster than many of today's fighters, the Douglas A4D attack bomber is so compact that it can

operate from carriers without folding its wings, giving a consequent reduction in weight, cost, and fuel consumption. In all respects the Skyhawk meets, and more than meets, demands on range, climb, armament, and load-carrying flexibility—exemplifying the

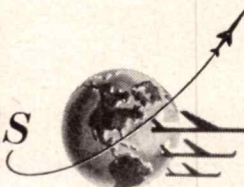
Douglas philosophy of more performance per pound of airplane.

Performance of A4D shows Douglas leadership in aviation. Planes that can be built in quantity to fly farther and faster with a bigger payload are a basic rule of Douglas design.



Be a Naval flier—write to Nav Cad, Washington 25, D. C.

Depend on **DOUGLAS**



First in Aviation

POWERPLANTS

AEROJET-GENERAL CORP.

AZUSA, CALIFORNIA

14AS-1000

TYPE: Solid propellant rocket.

SPECIFICATIONS: Diameter 10.25 in.; Length 35.4 in.; Empty weight 120 lb.; Loaded weight 200 lb.

PERFORMANCE: Rating 1,000 lb. thrust, or 330 hp, for a duration of 14 sec.

EQUIPMENT: JATO motor consists of a steel cylinder closed on fore end with exhaust nozzle, igniter and safety diaphragm located on aft end. Thrust is transmitted through three mounting lugs welded on the cylinder to the aircraft attachment fittings.

REMARKS: The 14AS-1000 JATO motor is CAA-certificated and its use

on the Douglas DC-3 and Douglas DC-4 airplanes has been approved by CAA for commercial airline operation.

A hermetically sealed version of the 14AS-1000, the 14AS-1000 G-1, has been authorized by the CAA for a source of standby power for commercial aircraft.

AJ10-24

TYPE: Liquid bi-propellant rocket, gas or chemically pressurized.

SPECIFICATIONS: Diameter 15 in.; Length 130 in.

EQUIPMENT: Assembly consists of a cylindrical section which contains the

oxidizer, fuel and pressurizing tanks. The pressure regulator and rocket motor are attached to the tank section.

REMARKS: This rocket powerplant is used to propel the Aerobee high-altitude sounding rocket.

15KS-1000

TYPE: Solid-propellant rocket.

PERFORMANCE: Rating 1,000 lb. thrust for 15 sec.

REMARKS: A new smokeless JATO developed for the Armed Services. New model is 5KS-4500 rated at 4500 lb. thrust for five seconds.

AIRCOOLED MOTORS, INC.

SYRACUSE, NEW YORK

6A4-165-B3

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 238.

SPECIFICATIONS: Length 27 13/32 in.; Fuel grade 80 octane; Bore 4.5 in.; Stroke 3.5 in.; Displacement 335 cu in.; Compression ratio 7:1; Dry weight 324 lb. with hub and accessories; Weight per hp 1.97 lb.

PERFORMANCE: Take-off power 165 hp at 2,800 rpm; Cruise 124 hp at 2,200 rpm; Fuel consumption .5 lb. per hp hr.; Oil consumption .002 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA4-5 or Bendix PS5-6; Ignition Dual Scintilla S6N21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump AC.

6V4-200-C32/C33

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 244.

SPECIFICATIONS: Length 29 1/32 in.; Fuel grade 91 octane; Bore 4.5 in.; Stroke 3.5 in.; Displacement 335 cu in.; Compression ratio 8.5:1; Dry

weight 333 lb. with hub and accessories; Weight per hp 1.66 lb.

PERFORMANCE: Take-off power 200 hp; Fuel consumption .52 lb. per hp hr.; Oil consumption .002 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA4-5 or Bendix PS5-C; Ignition Dual Scintilla S6-RN21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump Weldon.

REMARKS: This model was designed for helicopter installations.

6AG4-185B12

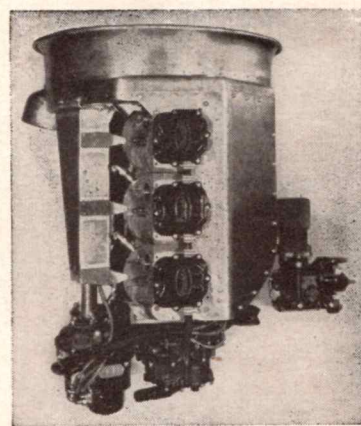
TYPE: 6 cylinder, air-cooled, horizontally opposed. CAA Type Certificate 238.

SPECIFICATIONS: Length 40 19/32 in.; Fuel grade 80 octane; Bore 4.5 in.; Stroke 3.5 in.; Displacement 335 cu in.; Compression ratio 7.5:1; Dry weight 360 lbs. with hub and accessories; Weight per hp 1.86 lbs.

PERFORMANCE: Take-off power 185 hp at 3,100 rpm; Cruise 135 hp hr; Oil consumption .002 lbs.

EQUIPMENT: Carburetor Marvel-Schebler MA4-5 or Bendix PS5-C;

Ignition Dual Scintilla; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.



6V4-178-B32/B-33

TYPE: 6 cylinder, air-cooled, horizontally opposed; 178 hp; CAA Type Certificate 244.

SPECIFICATIONS: Length 34 3/4 in.; Fuel grade 80 octane; Bore 4.5 in.; Stroke 3.5 in.; Displacement 335 cu in.; Compression ratio 7:1; Dry

weight 308 lb. with hub and accessories; Weight per hp 1.73 lb.

PERFORMANCE: Take-off power 178 hp; Fuel consumption .52 lb. per hp hr.; Oil consumption .002 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA4-5 or Bendix PS5-6; Ignition Dual Scintilla S6RN21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump Weldon.

6V6-245-B16F

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 258.

SPECIFICATIONS: Length 39 7/32

in.; Fuel grade 80 octane; Bore 4.75 in.; Stroke 4 in.; Displacement 425 cu. in.; Compression ratio 7.5:1; Dry weight 353 lb. with hub and accessories; Weight per hp 2.26 lb.

PERFORMANCE: Take-off power 245 hp at 3,275 rpm; Fuel consumption .52 lb. per hp hr.; Oil consumption .002 lb. per hp hr.

EQUIPMENT: Carburetor Bendix PS-7BD; Ignition Dual Eisemann LA-6.

6A4-150-B3

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 238.

SPECIFICATIONS: Length 37 3/8 in.;

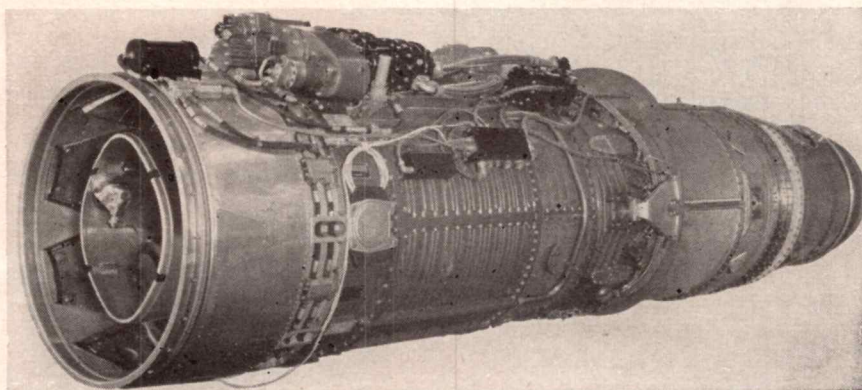
Fuel grade 80 octane; Bore 4.5 in.; Stroke 3.5 in.; Displacement 335 cu. in.; Compression ratio 7:1; Dry weight 321 lb. with hub and accessories; Weight per hp 2.14 lb.

PERFORMANCE: Take-off power 150 hp at 2,600 rpm; Cruise 113 hp at 2,350 rpm; Fuel consumption .5 lb. per hp hr.; Oil consumption .002 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA-3SPA; Ignition Dual Eisemann LA-6 or Scintilla S6RN21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.

ALLISON DIVISION. GENERAL MOTORS CORP.

INDIANAPOLIS, INDIANA



J71

TYPE: Axial-flow turbojet.

SPECIFICATIONS: Diameter 37 in.; Length 194 in.; Weight 4,090 lb.

PERFORMANCE: All performance data are classified.

REMARKS: The new J71 series turbojet engines are the latest development of the axial flow multi-stage compressor engine made by Allison. The engine has 16 axial stages of compression with a 3 stage turbine. It is an all-weather engine, incorporating de-icing features and has sub-

stantially improved fuel economy. The engine features a cannular combustion section. There are 10 individual inner cans within the single outer can and compressed air flows from the outer section to the inner liners for combustion.

Entirely independent of external oil supply, the J71 has its own complete oil system. It also has its own hydraulic system to operate a variable-area jet nozzle and retractable air inlet screens. Latest model is -9 installed in Douglas RB-66.

T40-A-6, -10

TYPE: Axial-flow turboprop.

SPECIFICATIONS: Length 181.6 in.; Width 38.5 in.; Height 36 in.; Weight 2,864 lb.; Compressor 19-stage, axial-flow; Turbine 4-stage, axial-flow; Air mass flow 62.2 lb. per sec.; Fuel grade AN-F-48A; Fuel consumption 0.620

lb. per hp hr.; Oil consumption (max. allow.) 4 lb. per hr.

PERFORMANCE: Take-off 5,850 ESHP at 14,300 rpm.

REMARKS: Model -6 is used in Douglas A2D Skyhawk carrier bomber and North American A2J-1. The model -10 is similar, except for relocation of accessories, and is used in the Convair R3Y flying boat.

J33-A-35

TYPE: Centrifugal-flow turbojet.

SPECIFICATIONS: Diameter 50.5 in.; Length 107 in.; Weight 1,820 lb.; Compression ratio 4.4:1; Air mass flow; 87 lb. per sec.; Exhaust temp. 1,265 deg. F.; Fuel grade J-P3; Fuel consumption 1.14 lbs. per hr. per lb.

PERFORMANCE: Take-off 5,400 lb. at 11,750 rpm with water injection, 4,600 lb. at 11,750 rpm dry; Normal 3,900 lb. at 11,250 rpm; Cruise 3,510 lb. at 10,900 rpm.

REMARKS: Used in Lockheed T-33 and TV-2 two-seat jet trainers.

J-33-A-37

TYPE: Centrifugal-flow turbojet.

SPECIFICATIONS: Length 159.50 in.; Width 49.83 in.; Total weight 1750 lb.; Compressor stages One; Turbine stages One; Starter Electric starter generator.

PERFORMANCE: Static thrust 4600 lb. at 11,750 rpm; Idle 1010 lb. at 7000 rpm.

REMARKS: Current production installation is in Martin B-61 Matador.

J35-A-35

TYPE: Axial-flow turbojet.

SPECIFICATIONS: Diameter 40-9/16 in.; Length 195.5 in.; Weight 2,830 lb.; Compression ratio 5.1:1; Air mass flow 90 lb. per sec.; Exhaust temp. 1,340 deg. F.; Fuel grade JP-4; Fuel consumption 1.10 lbs. per hr. per lb.

PERFORMANCE: Take-off 7,400 lb. at 8,000 rpm; Military 5,600 lb. at 8,000 rpm; Normal 4,990 lb. at 7,650 rpm; Cruise 4,491 lb. at 7,370 rpm.

REMARKS: Afterburner equipped. Used in Northrop F-89D all-weather Scorpion.

CONTINENTAL MOTORS CORP.

MUSKEGON, MICHIGAN

A65-8F

TYPE: 4 cylinder, air-cooled, horizontally opposed. CAA Type Certificate 205.

SPECIFICATIONS: Length 30.41 in.; Fuel grade 73 octane; Bore 3.875 in.; Stroke 3.625 in.; Displacement 171 cu. in.; Compression ratio 6.3:1; Dry weight 176 lb. with hub and accessories; Weight per hp 2.7 lb.

PERFORMANCE: Take-off power 65 hp at 2,350 rpm; Cruise 53 hp at 2,150 rpm; Fuel consumption .49 lb. per hp hr.

EQUIPMENT: Carburetor Stromberg NA-S3B; Ignition Eisemann AMA or J. I. Case 4-CAM; Fuel pump A. C. Spark Plug Co.

C85-12F

TYPE: 4 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 233.

SPECIFICATIONS: Length 32 in.; Fuel grade 73 octane; Bore 4.062 in.; Stroke 3.625 in.; Displacement 188 cu. in.; Compression ratio 6.3:1; Dry weight 182 lb. with hub and accessories; Weight per hp 2.14 lb.

PERFORMANCE: Take-off power 85 hp at 2,575 rpm; Cruise 63 hp at 2,400 rpm; Fuel consumption 5.4 gal. per hr.

EQUIPMENT: Carburetor Bendix-Stromberg NA-S3A1; Ignition Scintilla S4LN-21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.

C90-12F

TYPE: 4 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 252.

SPECIFICATIONS: Length 31 1/4 in.; Fuel grade 80 octane; Bore 4.062 in.; Stroke 3.875 in.; Displacement 200.91 cu. in.; Compression ratio 7:1; Dry weight 186 lb. with hub and accessories; Weight per hp 2.07 lb.

PERFORMANCE: Take-off power 90 hp at 2,475 rpm; Cruise 68 hp at 2,350 rpm; Fuel consumption .52 lb. per hp hr.

EQUIPMENT: Carburetor Bendix-Stromberg NA-S3A1; Ignition Scintilla S4LN-21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.

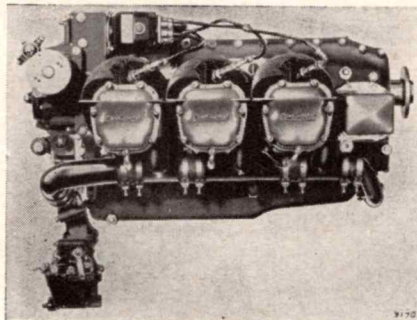
C125-2

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 236.

SPECIFICATIONS: Length 41 in.; Fuel grade 73 octane; Bore 4.062 in.; Stroke 3.625 in.; Displacement 282 cu. in.; Compression ratio 6.3:1; Dry weight 257 lb. with hub and accessories; Weight per hp 2.05 lb.

PERFORMANCE: Take-off power 125 hp at 2,550 rpm; Cruise 98 hp at 2,400 rpm; Fuel consumption .5 lb. per hp hr.

EQUIPMENT: Carburetor Marvel MA-3SPA; Ignition Scintilla C6LN-21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.



O-470-A

TYPE: 6 cylinder, air cooled, horizontally opposed; CAA type certificate 273.

SPECIFICATIONS: Fuel grade 80/86 octane; Bore 5 in.; Stroke 4 in.; Displacement 471 cu. in.; Compression ratio 7.01 to 1; Dry weight 357 lbs.; Weight per hp 1.59 lb.

PERFORMANCE: Take-off power 225 hp at 2,600 rpm; Cruise 175 hp at 2,400 rpm; Fuel consumption .5 lb. per hp hr.

EQUIPMENT: Carburetor Marvel MA-4-5; Ignition Bendix-Scintilla S6RN-25; Starter Delco-Remy; Generator Delco-Remy; Oil Cooler Harrison; Fuel Pump Romec. Provisions included for prop. governor.

REMARKS: This model which powers both the new Cessna 180 and 310 is the first of Continental's new O-470 series to reach production. Among the design improvements are a new oil cooler integrally attached to the crankcase which uses the down flow of air, as do the cylinder fins and a full flow type oil filter mounted within the crankcase at the former location of the screen which it supplants. Supercharging can be provided at minimum cost by the addition of a belt-driven external supercharger. Other models in the series are:

Model O-470-B. Similar to O-470-A, but with Bendix-Stromberg PS5C carburetor mounted at back of engine.

Designed for wing-type installation. Performance 235 hp at 2,600 rpm with compression ratio of 8:7 and 91 octane fuel. Model SO-470. Similar to O-470-B, but with supercharger. Rating 265 hp at 2600 rpm at 10,000 ft. for take-off and normal rating. Model GSO-470. Similar to SO-470, but with geared prop. drive. Rating 300 hp at 3000 rpm at 10,000 ft. take-off and normal rating.

Continental Model 140

TYPE: Gas Turbine Air Compressor.

SPECIFICATIONS: Diameter 19.7 in.; Length 41.8 in.; Compressor single-sided, centrifugal. Turbine two-stage, solid disc, axial flow; Combustor Annular, straight-through flow; Air delivery 2.3 lb. sec. at 50 psi, std. day; Weight 210 lb.

PERFORMANCE: Air hp 205 at 34,000 rpm; std. day; Total air flow 6.8 lb. sec., std. day; Fuel flow 280 lb. hr. at max. rpm, std. day; Turbine exit temp. 1025 deg. F. at 34,000 rpm, 205 air hp.

REMARKS: The air generator is presently being used for turbine starting. The unit is an American version of the French PALOUSTE series.

C145-2

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 253.

SPECIFICATIONS: Length 41 in.; Fuel grade 80 octane; Bore 4.062 in.; Stroke 3.875 in.; Displacement 301.37 cu. in.; Compression ratio 7:1; Dry weight 265 lb.; Weight per hp 1.77 lb.

PERFORMANCE: Take-off power 145 hp at 2,700 rpm; Cruise 108 hp at 2,450 rpm; Fuel consumption .5 lb. per hp hr.

EQUIPMENT: Carburetor Marvel MA-3SPA; Ignition Scintilla S6LN-21; Starter Delco-Remy; Generator Delco-Remy; Fuel pump A. C. Spark Plug Co.

O-315-A

TYPE: 4 cylinder, air-cooled, horizontally opposed.

SPECIFICATIONS: Fuel grade 80/86 octane; Bore 5 in.; Stroke 4 in.; Displacement 315 cu. in.; Compression ratio 7:1; Dry weight 287 lbs; Weight per hp 1.91 lbs.

PERFORMANCE: Normal rated power 150 hp at 2,600 rpm; Cruise 115 hp at 2400 rpm; Fuel consumption .5 lb. per hp hr.

E185

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 246.

SPECIFICATIONS: Length 46.66 in.; Fuel grade 80 octane; Bore 5 in.; Stroke 4 in.; Displacement 471 cu. in.; Compression ratio 7:1; Dry weight 350 lb.; weight per hp 1.89 lb.

PERFORMANCE: Take-off power 205 hp at 2,600 rpm; Cruise 130 hp at 2,050 rpm; Fuel consumption .5 lb. per hp hr.

EQUIPMENT: Carburetor Bendix-Stromberg PS-5C; Ignition Scintilla S6LN-21; Starter Provisions for direct cranking starter; Generator Delco-Remy; Fuel pump Thompson or Romec. This engine also available with full AN accessory section.

E-225

TYPE: 6 cylinder, air-cooled, horizontally opposed; CAA Type Certificate 267.

SPECIFICATIONS: Length 48.4 in.; Fuel grade 80/86 octane; Bore 5 in.; Stroke 4 in.

PERFORMANCE: Take-off power 225 hp at 2,650 rpm; Cruise 170 hp at 2,400 rpm; Fuel consumption .5 lb. per hp hr.

EQUIPMENT: Carburetor Bendix-Stromberg PS-5C; Ignition Scintilla S6LN-21; Starter Eclipse Type 397-13; Generator Delco-Remy; Fuel pump Romec. This engine also available with full AN accessory section.

352 (J69-T-9)

TYPE: Centrifugal-flow turbojet.

SPECIFICATIONS: Diameter 22.3 in.; Length 50.5 in.; Compressor single-sided, centrifugal flow; Turbine single-stage, solid disc, axial flow. Combustor annular, straight-through flow; Weight 310 lb.

PERFORMANCE: Static thrust 920 lb.; Take-off air flow 17 lb. sec.; SFC 1.10 at Take-off rating; Turbine exit temp. 1220 deg. F. at 22,700 rpm sea level.

REMARKS: The other models are available as target drone power plant and booster units.

Other small gas turbines either in partial production, development or experimental stages include Model 420 (Aspin II) with a takeoff thrust of 790 lb. at 34,500 rpm; Model 210-1 (Artouste I) with a takeoff shaft hp of 280 plus 40 lb. thrust at 34,000 rpm—this model was used on the Cessna XL-19C; Model 220-2 (Ar-

touste II) with a takeoff shaft hp of 425 at 33,000 rpm—used in the Sikorsky XH-39 helicopter; Model 260, 400 hp at takeoff at 34,800 rpm; Model 354 with 1,000 lb. thrust at 20,350 rpm—is scheduled for the Ryan Q-2 drone; Model 352 with a takeoff thrust of 920 lb. at 22,700 rpm is scheduled for the production Cessna XT-37 trainer.

FAIRCHILD ENGINE & AIRPLANE CORP. J44

TYPE: Turbojet.

PERFORMANCE: Static thrust 1000 lb. at 15,780 rpm; Normal rated thrust 1000 lb. at 15,780 rpm; Afterburner thrust None.

SPECIFICATIONS: Length 82 in.; Width 22 in.; Total weight 335 lb.; Compressor stages 1; Turbine stages 1.

EQUIPMENT: Starter Comp. air or electric.

GENERAL ELECTRIC CO.

CINCINNATI, OHIO

J73

TYPE: Axial-flow turbojet.

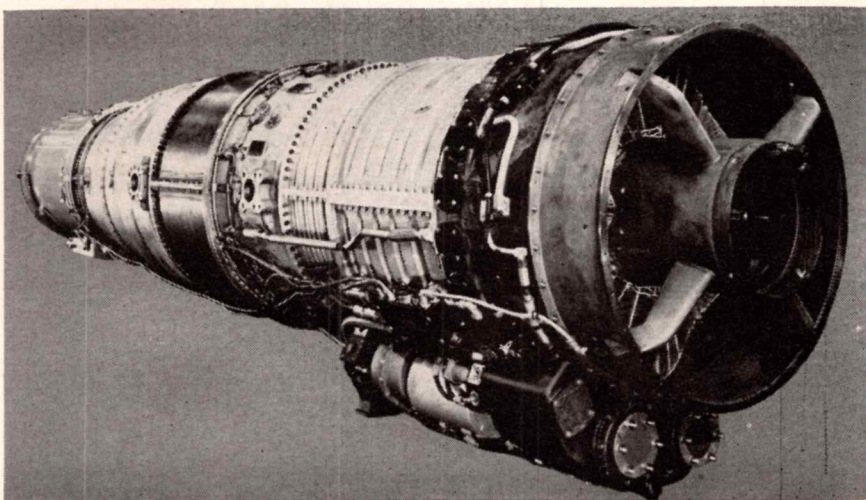
SPECIFICATIONS: Diameter 36.75 in.; Length 146 in.

PERFORMANCE: Static thrust In excess of 7,000 lb. dry. Afterburner thrust has been estimated at 14,000 lb. by some experts not in on the development or production of this model.

XT 58-GE-2

TYPE: Axial flow turboshaft.

REMARKS: All specifications and data on the XT-58 are classified other than to say its size is comparable to the conventional piston power plant in the family automobile but is several times as powerful. It is designed for the Navy's Bureau of Aeronautics primarily to power helicopters; however, with some modifications, it can be adapted as a power plant for fixed wing aircraft either as a turbo-prop or a turbo-jet.



J47-GE-13

TYPE: Axial-flow turbojet.

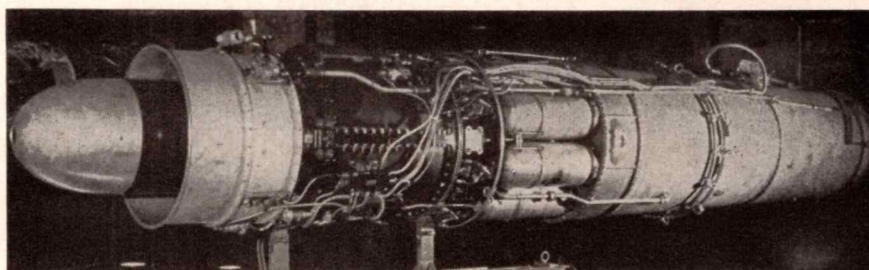
SPECIFICATIONS: Weight 2,500 lb. (approx.); Frontal area 7.35 sq. ft.; Length 144 in.; Diameter 36.75 in.; Compressor 12 stage axial flow; Compression ratio 5:1; Turbine Single stage; Inlet air flow 90 lb. per sec.;

Fuel grade AN-F-58 or 100/130 gasoline.

PERFORMANCE: Take-off thrust Over 5,200 lb. at 7,950 rpm at sea level; Normal rating 4,320 lb. at 7,370 rpm; Cruise rating 3,700 lb. at 7,000 rpm.

J47-GE-17, 23, 25, 27

The -17 engine is the standard production model redesigned to reduce its use of strategic materials by using substitute materials wherever possible. This redesign resulted in a saving of about 20 percent in special metals used previously. In addition, the engine is equipped with a long afterburner assembly. This auxiliary unit provides a substantial increase in

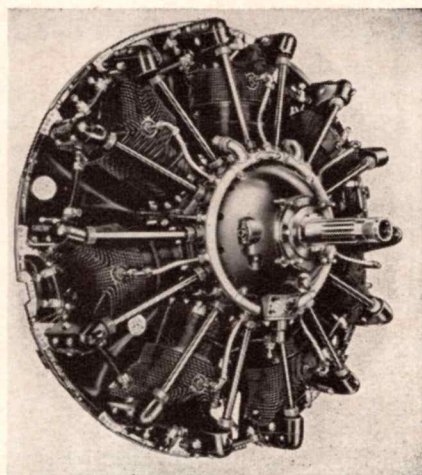


thrust for short periods by the injection of raw fuel into the hot tailpipe gases, resulting in additional fuel consumption. The -23, 25, and 27 engines

feature special anti-icing equipment and a special ignition system making starts possible at altitudes of more than 50,000 ft. Thrust is over 6,000 lb.

JACOBS AIRCRAFT ENGINE CO.

POTTSTOWN, PENNSYLVANIA



R-755A

TYPE: Radial 7 cyl. air cooled.

PERFORMANCE: Takeoff hp 300 at 2200 rpm; Cruising hp 225 at 1900 rpm; Fuel consumption .450 per hp hr. at cruising.

SPECIFICATIONS: Displacement 757 cu. in.; Bore 5.25 in.; Stroke 5.00 in.; Compression ratio 6:1; Fuel grade 80 min.; Dry weight 505 lb.; Dia. 44 in.; Length 40.2 in.; Carburetor Stromberg NA-R7A; Magnetos 1 Scintilla model VMN7-DF5, 1 Scintilla distributor (battery and coil); Starter and generator Provision for Eclipse type 397 starter, Eclipse 25 amp generator.

Current production installations Cessna 195.

R-755B

TYPE: 7 cyl. radial A.C.

PERFORMANCE: Takeoff hp 275 at 2200 rpm; Cruising hp 205 at 1900 rpm; Fuel consumption .450 per hp hr.

SPECIFICATIONS: Displacement 757 cu. in.; Bore 5.25 in.; Stroke 5.00 in.; Compression ratio 6:1; Fuel grade 80 min.; Dry weight 500 lb.; Width 44 in.; Length 40.2 in.; Carburetor Strom NA-R7A; Magnetos 1 Scintilla VMN7-DF5, 1 Scintilla battery timer; Starter and generator Provision for Eclipse type 397 starter, Eclipse 25A generator.

Current production installations Cessna 195.

R-755EH

TYPE: Air cooled 7 cyl. radial geared for rotor 8.5:1.

PERFORMANCE: Takeoff hp 350 at 2500 rpm; Cruising hp 262 at 2500 rpm; Fuel consumption .500 per hp hr.

SPECIFICATIONS: 757 cu. in.; Bore 5.25 in.; Stroke 5.00 in.; Compression ratio 6.5:1; Fuel grade 92 min.; Dry weight 600 lb.; Dia. 44.0 in.; Length 42.37 in.; Carburetor Simmonds S.U. fuel injection pump; Magnetos 1 Scintilla VMN7-DF5, 1 Scintilla battery timer; Starter and generator Provision for Eclipse type 397 starter, Eclipse 25A generator.

Current production installations (Experimental) Jacobs 104 helicopter.

O-435-A

TYPE: 6 cylinder, air-cooled, horizontally opposed. CAA Type Certificate 228.

SPECIFICATIONS: Length 38.10 in.; Fuel grade 80 octane; Bore 4.875 in.; Stroke 3.875 in.; Displacement 434 cu. in.; Compression ratio 6.5:1; Dry

weight 392 lb. with hub and accessories; Weight per hp 2.06 lb.

PERFORMANCE: Takeoff power 190 hp at 2,550 rpm; Cruise 145 hp at 2,300 rpm; Fuel consumption .52 lb. per hp hr.; Oil consumption .0012 lb. per hp hr.

EQUIPMENT: Carburetor Marvel Schebler MA-4-5; Ignition Dual Scintilla SFGLN-8; Starter Delco-Remy; Generator Delco-Remy.

O-290-D-2

TYPE: 4-cylinder, horizontally-opposed, direct-drive, air-cooled. Approved Type Certificate 229.

SPECIFICATIONS: Length 29.56 in.; Height 22.81 in.; Width 32.32 in.; Bore 4.875 in.; Stroke 3.875 in.; Displacement 289 cu. in.; Compression ratio 7.0:1; Weight 255 lb.; Fuel grade 80 octane.

PERFORMANCE: Takeoff power 140 hp at 2,800 rpm; Rated power 125 hp at 2,600 rpm; Fuel consumption 0.46 lb. per hp. hr.

EQUIPMENT: Carburetor Marvel-Schebler MA-3SPA; Magnetos Scintilla S4LN-20/21; Starter Delco-Remy; Generator Delco-Remy.

GSO-580-D

TYPE: 8 cylinder, air-cooled, horizontally opposed. CAA Type Certificate 256.

SPECIFICATIONS: Length 57.08 in.; Fuel grade, 100/130 octane; Bore 4.875 in.; Stroke 3.875 in.; Displacement 578 cu. in.; Compression ratio 7.30:1; Weight 543 lb.

PERFORMANCE: Takeoff power 400 hp; Fuel consumption .57 lb. per hp.

EQUIPMENT: Carburetor Bendix; Ignition Scintilla; Fuel pump Pesco.

LYCOMING-SPENCER DIVISION, AVCO MFG. CORP.

WILLIAMSPORT, PA.

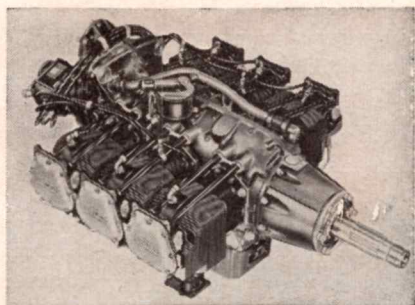
O-235-C1

TYPE: 4 cylinder, air-cooled, horizontally opposed; 115 hp. CAA Type Certificate 223.

SPECIFICATIONS: Length 29.56 in.; Fuel grade 80 octane; Bore 4.375 in.; Stroke 3.875 in.; Displacement 233.3 cu. in.; Compression ratio 6.75:1; Dry weight 236 lb. with hub and accessories; Weight per hp 2.05 lb.

PERFORMANCE: Takeoff power 115 hp 2,800 rpm; Cruise 86 hp at 2,350 rpm; Fuel consumption .52 lb. per hp hr; Oil consumption .012 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA-3A; Ignition Dual Scintilla S4LN-21; Starter Delco-Remy; Generator Delco-Remy.



GO-435-C2

TYPE: 6-cylinder, horizontally-opposed, geared, air-cooled. Approved Type Certificate 228.

SPECIFICATIONS: Length 39.57 in.; Height 29.59 in.; Width 33.12 in.; Bore 4.875 in.; Stroke 3.875 in.; Displacement 434 cu. in.; Compression

ratio 7.3:1; Weight 432 lb.; Fuel grade 91/98.

PERFORMANCE: Takeoff power 260 hp at 3,400 rpm; Rated power 240 hp at 3,000 rpm; Fuel consumption 0.47 lb. per hp hr.

EQUIPMENT: Carburetor Marvel-Schebler MA-4-5; Magnetos Scintilla SF6LN-8; Spark plugs Autolite SH-2K.

PERFORMANCE: Takeoff power 400 hp; Fuel consumption .57 lb. per hp.

EQUIPMENT: Carburetor Bendix; Ignition Scintilla; Fuel pump Pesco.

O-320

TYPE: 4 cylinder air-cooled, horizontally opposed. CAA Type Certificate 274.

SPECIFICATIONS: Length 29.40 in.; Fuel grade 80/87 octane; Bore 5.125 in.; Stroke 3.875 in.; Displacement 319.8 cu. in.; Compression ratio 7.00:1; Dry weight 272 lb.

PERFORMANCE: Takeoff power 150 hp; Fuel consumption .53 lb. per hp.

EQUIPMENT: Carburetor Marvel-Schebler; Ignition Delco-Remy; Fuel pump AC.

VO-434A1A

TYPE: 6 cylinder, opposed, aircooled for vertical installation. CAA type certificate No. 279.

SPECIFICATIONS: Displacement 434.0 cu. in.; Bore 4.875 in.; Stroke 3.875 in.; Compression ratio 7.3:1; Fuel grade 80/87; Dry weight 394 lb.; Width 33.12 in.; Length 35.21 in.

PERFORMANCE: Continuous hp 250 at 3200 rpm; Fuel consumption 80 percent power, 3200 rpm, 20 gal. per hr.

EQUIPMENT: Carburetor MA45; Magnetos Scintilla S6RN20, 21.

O-340

TYPE: 4 cylinder, horizontally opposed, air-cooled engine. CAA type certificate 277.

SPECIFICATIONS: Displacement 340.4 cu. in.; Bore 5.125 in.; Stroke 4.125 in.; Compression ratio 7.15:1; Fuel grade 80/87; Dry weight 275 lb.; Width 32.55 in.; Length 24.68 in.

PERFORMANCE: Takeoff hp 160 at 2700 rpm; Cruising hp 120 at 2450 rpm; Fuel consumption 9 gal. per hr.

EQUIPMENT: Carburetor Marvel-Schebler MA45; Magnetos Scintilla S4LN20, 21; Starter and generator Delco-Remy.

SO-480

TYPE: 6 cylinder, aircooled, supercharged, helicopter engine for horizontal or vertical installation.

SPECIFICATIONS: Displacement 479.7 cu. in.; Bore 5.125 in.; Stroke 3.875 in.; Compression ratio 7.3:1; Fuel grade 100/130; Dry weight 444 lb.; Width 33.12 in.; Length 38.53 in.

PERFORMANCE: Continuous hp 325 at 3200 rpm; Fuel consumption 25 gals./hr. at 80 percent normal, 3200 rpm.

EQUIPMENT: Carburetor Bendix PS7BD; Magnetos Scintilla S6RN20, 21.

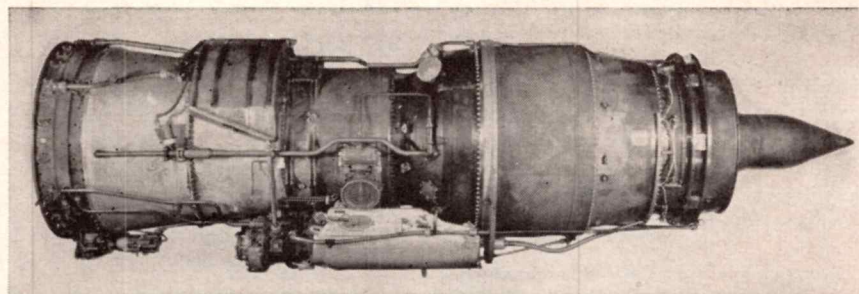
PRATT & WHITNEY AIRCRAFT DIVISION OF UNITED AIRCRAFT CORP.

EAST HARTFORD, CONNECTICUT

Turbo-Wasp J57 (JT-3)

TYPE: Axial-flow turbojet.

REMARKS: Specifications and performance are still classified other than mention that engine is in the 10,000 lb. thrust class. It powers the Air Force's Boeing B-52 long-range bomber, the North American F-100, McDonnell F-101, Convair F-102, and the Navy's Douglas F4D fighter and



A3D bomber. The J-57 also powers the Boeing 707. The fighter aircraft

are powered by afterburner versions of the J-57 engine.

Twin Wasp D Series (R-2000)

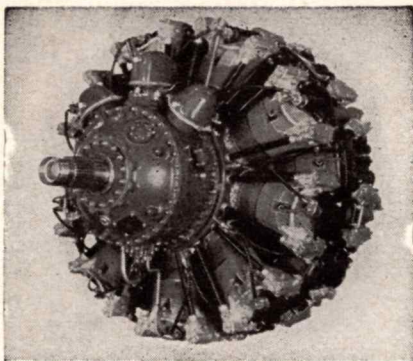
TYPE: 14 cylinder, air-cooled, radial, CAA type certificate 230.

SPECIFICATIONS: Diameter 49.1 in.; Length 59.66 in.; Fuel grade 100/130; Bore 5.75 in.; Stroke 5.5 in.; Displacement 2,004 cu. in.; Compression ratio 6.5:1; Dry weight Single speed, 1,585 lb.; two speed, 1,605 lb.

PERFORMANCE: Takeoff 1,450 at 2,700 rpm and 2,800 ft.; Normal rated power 1,200 hp at 2,550 rpm and 6,400 ft.

EQUIPMENT: Carburetor Stromberg PD-12F13; Ignition two Scintilla SF-14LN-8.

REMARKS: Powers Douglas C-54 military transport, workhorse of World War II, the Berlin Airlift and the Trans-Pacific Airlift in support of the Korean campaign.



Double Wasp CA and CB Series (R-2800)

TYPE: 18 cylinder, air-cooled, radial, CAA type certificates 231 and 264.

SPECIFICATIONS: Diameter 52.8 in.; Length 81.40 in.; Fuel grade 100/130 or 108/135; Bore 5.75 in.; Stroke 6 in.; Displacement 2,804 cu. in.; Compression ratio 6.75 to 1; Dry weight Two speed, 2,390 lb.; single speed 2,357 lb.

PERFORMANCE: (CB3) Takeoff power 2,400 hp at 2,800 rpm at 4,000 ft. with water injection; 2,050 hp at 2,700 rpm at 6,000 ft. dry; Normal rated power 1,800 hp at 2,600 rpm at 8,500 ft.

EQUIPMENT: Carburetor Stromberg PR-58E5; Ignition Scintilla DLN-10 low tension; CB16, same in low, but has maximum continuous rating in high of 1,700 hp.

REMARKS: The CA series includes the -3, -15, and -18 models. The CB series includes the -3, -4, -16 and -17 models. Essential differences are in

supercharging gear ratios and weights. Most other parts are interchangeable. Military versions of the Double Wasp power the following production aircraft: Beech T-36, Bell XHSL-1 helicopter, Chase C-123 transport, Convair T-29 trainer, Douglas C-118A -cargo, Grumman AF-2S and -2W hunter-killer teams, North American AJ-1 carrier bomber and Vought F4U-5N and AU-1 fighter-bombers. Commercial versions power the Convair 240 and 340 transports, Douglas DC-6, -6A, and -6B transports and Martin 2-0-2A and 4-0-4 transports.

Turbo-Wasp J48 (JT-7)

TYPE: Centrifugal-flow turbojet.

SPECIFICATIONS: Diameter 50.50 in.; Length 109.75 in.; Compressor double-entry, single-stage, centrifugal-flow; Turbine axial-flow, single-stage; Weight 2,080 lb.; Fuel Kerosene, gasoline or special jet fuel.

PERFORMANCE: Takeoff power 7,250 lb. thrust; Military rating 7,250

lb. thrust; Normal rating 5,600 lb. thrust; Cruise rating 3,750 lb. or 3,100 lb. thrust.

REMARKS: The J48 powers the Navy's Grumman F9F-5 Panther and the swept-wing F9F-6 and F9F-8 and the Lockheed F94C all-weather interceptor for the Air Force.

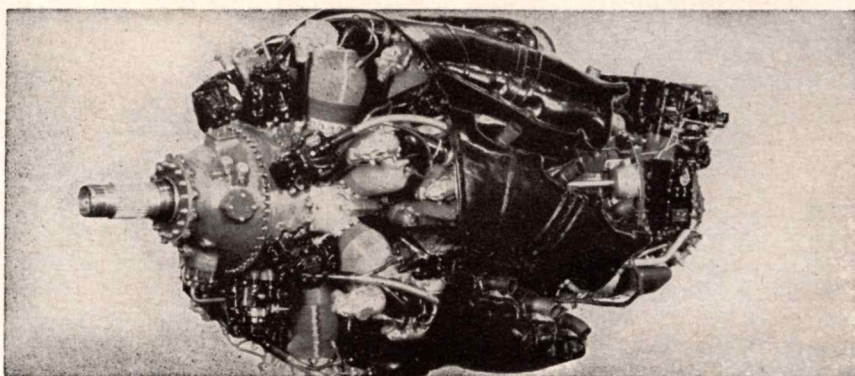
Turbo-Wasp PT-2 (T34)

TYPE: Axial-flow turboprop.

SPECIFICATIONS: Diameter 34.06 in.; Length 157.4 in.; Compression 13-stage axial-flow; Turbine three-stage, axial-flow; Propeller reducing gear two-stage, 11:1 ratio; Weight 2,564 lb.; Fuel Kerosene, gasoline or special jet fuel.

PERFORMANCE: Takeoff power 5,700 hp.; Fuel consumption 0.62 lb. hp hr.

REMARKS: Engine thrust is divided 90 percent to propeller turbine and 10 percent to jet nozzle. Stainless steel is used almost exclusively throughout the engine structure. This model is no longer offered commercially.



Wasp Major CB Series (R-4360)

TYPE: 28 cylinder, air-cooled, radial, CAA type certificate 247.

SPECIFICATIONS: Diameter 55 in.; Length 96.5 in.; Fuel grade 108/135; Bore 5.75 in.; Stroke 6 in.; Displacement 4,363 cu. in.; Compression ratio 6.7:1; Dry weight 3,682 lb.

PERFORMANCE: Takeoff power 3,500 hp at 2,700 rpm and 500 ft. (with water); 3,250 hp at 2,700 rpm and 700 ft (without water); Normal rated power 2,650 hp at 2,550 rpm at 5,500 ft.; Maximum continuous rating 2,840

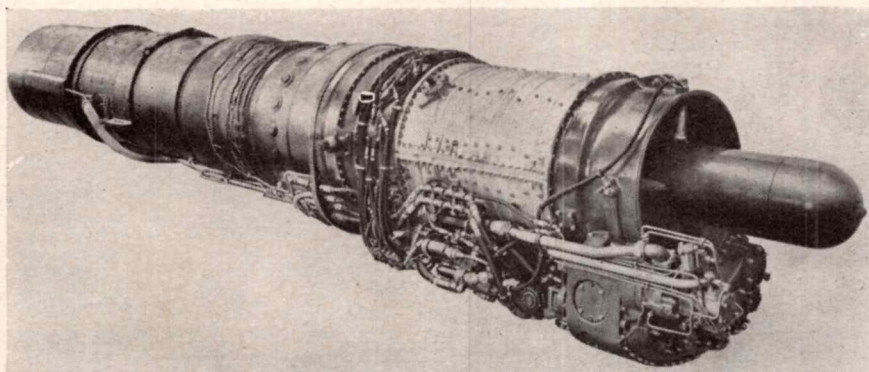
hp at 2,550 rpm at 3500 ft.

EQUIPMENT: Carburetor Stromberg PR-100B3; Ignition 4 Scintilla SI4RN-15 low tension.

REMARKS: Wasp Major is used on Boeing B-50 bomber (4), Convair B-36 bomber (6), Boeing C-97 transport (4), Douglas C-124 transport (4), Convair C-99 transport (6), Fairchild C-119 Packet (2) and the Boeing Stratocruiser commercial transport (4). Development versions of the engine have produced more than 4,000 hp.

WESTINGHOUSE ELECTRIC CORP. AVIATION GAS TURBINE DIVISION

PHILADELPHIA, PENNSYLVANIA



J46-WE-8

TYPE: Axial-flow turbojet.

SPECIFICATIONS: Diameter Approx. 3 ft.; Length Approx. 16 1/2 ft.; Weight Approx. 2,100 lb.

REMARKS: All other specification and performance data are classified.

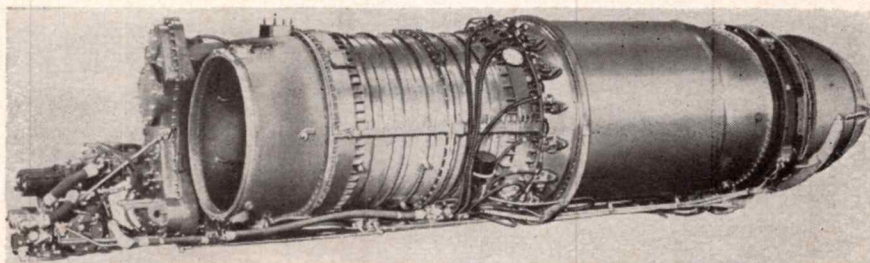
J34-WE-36

TYPE: Axial-flow turbojet.

SPECIFICATIONS: Diameter 27 in.; Length 111.4 in.; Height 34.7 in.; Weight 1,207 lb.; Compression ratio 4.35.

PERFORMANCE: Takeoff thrust 3,400 lb. at 12,500 rpm; Operating altitude 45,000 ft.

REMARKS: Automatic control system functions from single cockpit lever. Air inlet is divided into two elliptic openings between the arms of the "Y" duct. All other data are classified.



J40-WE-8

TYPE: Axial-flow turbojet.

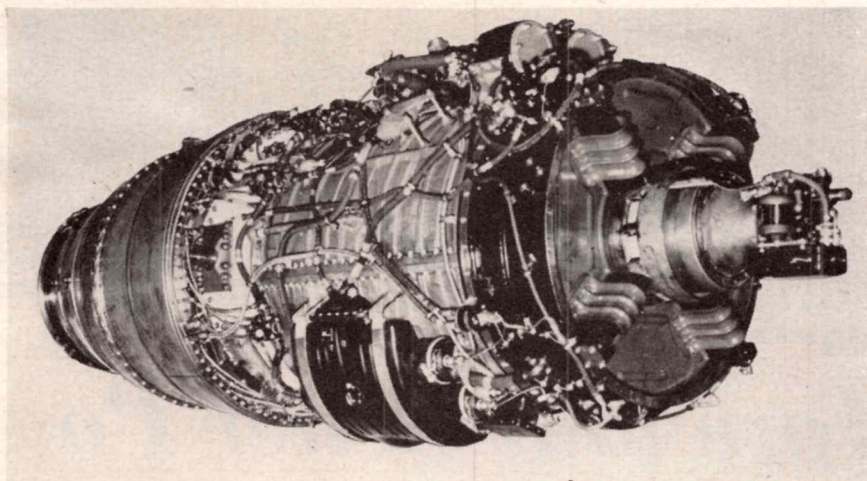
Weight Approx. 3,500 lb.

SPECIFICATIONS: Diameter Approx. 40 in.; Length Approx. 25 ft.;

REMARKS: All other specification and performance data are classified.

WRIGHT AERONAUTICAL DIVISION, CURTISS WRIGHT CORP.

WOOD-RIDGE, NEW JERSEY



J65-W-1

TYPE: Axial-flow turbojet.

SPECIFICATIONS: Diameter 37.5 in.; Length 114.83 in.; Weight 2,595 lb. (2,696 with accessories); Compressor stages 13 of 29.375 in. in diameter; Turbine stages 2 of 30.5 in. in diameter.

PERFORMANCE: Static thrust 7,220-

7800 lb. at 8,300 rpm; Normal rated thrust 6,400 lb. at 8,000 rpm.

REMARKS: Current production installation of various J65 models include Grumman F9F-9, Douglas A4D, Lockheed XF-104, Martin B-57, North American FJ-3 and FJ-4, Republic RF84-F and F84-F. The J65-W-4 is rated at 7,800 lb. thrust.

972TC18DA4

TYPE: 18 cylinder radial compound.

SPECIFICATIONS: Displacement 3350 cu. in.; Bore 6.125 in.; Stroke 6.312 in.; Compression ratio 6.7:1; Fuel grade 115/145; Dry weight 3549 ± 1 percent lb; Width 56.59 in.; Length 89.53 in.

PERFORMANCE: Takeoff hp 3250 at 2900 rpm; Cruising hp 1910 at 2400 rpm; Fuel consumption .385 lb. per hp hr. (at 1200 hp).

EQUIPMENT: Carburetor Bendix PR58S2; Magnetos Bendix-Scintilla DLN-9.

REMARKS: This model is currently in production for the Douglas DC-7B. Another model, the TC-18DA3, with only slight differences, is in production for the Lockheed 1049E, F and G.



DEER PARK
LONG ISLAND
N.Y.

SIGNPOST FOR FAIRCHILD'S NEW POWER DEVELOPMENT CENTER

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development and production of power for tomorrow's weapons systems and for unique power applications in industry. In addition to mass-producing small turbojets for target drones, pilotless planes and guided missiles, and weapons systems for undersea craft, Deer Park will provide modern equipment for testing and

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evaluating newer, more economical sources of power for the armed forces.

This new plant and turbine test laboratory are in keeping with Fairchild's policy of planning now for future needs of the military services and for specialized demands of industry.

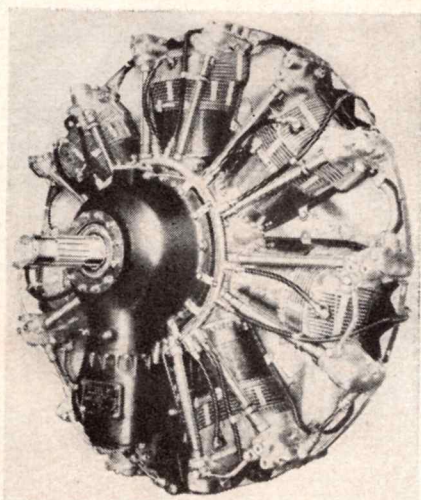


ENGINE AND AIRPLANE CORPORATION
FAIRCHILD
Engine Division

FARMINGDALE, LONG ISLAND, NEW YORK
 PLANT LOCATIONS:
 FARMINGDALE • MINEOLA • VALLEY STREAM



Including AL-FIN, the Fairchild patented process for the molecular bonding of aluminum and magnesium to steel, cast iron, nickel or titanium.



R-1300-1

TYPE: 7 cylinder, air-cooled, radial.

SPECIFICATIONS: Length 48.12 in.; Fuel grade 91/98 octane; Bore 6.125 in.; Stroke 6.312 in.; Displacement 1,300 cu. in.; Compression ratio 6.2:1; Dry weight 1,045 lb.; Weight per hp 1.28 lb.

PERFORMANCE: Takeoff power 800 hp at 2,600 rpm; Cruise 420 hp; Fuel consumption .48 lb. per hp hr.; Oil consumption .015 lb. per hp hr.

EQUIPMENT: Carburetor Stromberg PD9FI; Ignition Dual Bosch SF-7LU-2.

R-1300-2

TYPE: 7 cylinder air cooled.

SPECIFICATIONS: Diameter 50.45 in.; Bore 6.125 in.; Stroke 6.312 in.; Displacement 1,300 cu. in.; Compression ratio 6.21 to 1; Gross weight, dry, 1,056 lb.

PERFORMANCE: Takeoff power 800 hp at 2,600 rpm at S. L.; Fuel consumption 0.451 lb. per hp per hr.

REMARKS: This engine was designed for blimp and helicopter installations; also the R-1300-3.

R-1300-4

TYPE: 7 cylinder radial reciprocating, air-cooled.

SPECIFICATIONS: Displacement 1300 cu. in.; Bore 6.125 in.; Stroke 6.312 in.; Compression ratio 6.2:1; Fuel grade 91/96; Dry weight 1092 lb.; Width 50.45 in.; Length 48.12 in.

PERFORMANCE: Takeoff hp 800 at 2600 rpm; Cruising hp 420 at 2200 rpm; Fuel consumption .438 lb. per hp hr. (at 215 hp).

EQUIPMENT: Carburetor Bendix PD9FI; Magnetos Am. Bosch S7LU-3.

REMARKS: Current production installation is Goodyear ZP5K blimp.

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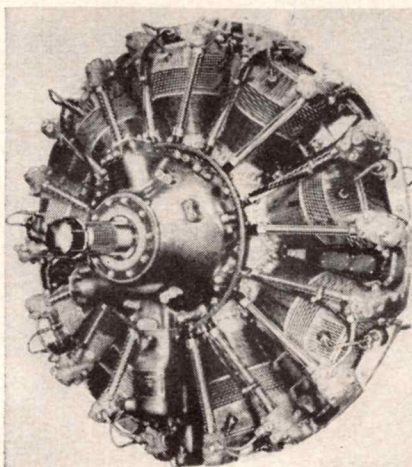
TYPE: 18 cylinder radial reciprocating.

SPECIFICATIONS: Displacement 3350 cu. in.; Bore 6.125 in.; Stroke 6.312 in.; Compression ratio 6.7:1; Fuel grade 115/145; Dry weight 3615±1 percent lb.; Width 56.59 in.; Length 89.53 in.

PERFORMANCE: Takeoff hp 3700 at 2900 rpm; (1400 lb./hr. water-alcohol flow.) Cruising hp 1910 at 2400 rpm; Fuel consumption .385 lb. per hp hr. (at 1200 hp).

EQUIPMENT: Carburetor Bendix PR58S2; Magnetos Bendix-Scintilla DLN-9.

REMARKS: Current production installations are Canadair CL-28 and Douglas DC-7C.



R-1820-76A

TYPE: 9 cylinder, air-cooled, radial, CAA type certificate 243.

SPECIFICATIONS: Length 47.69 in.; Fuel grade 100/130; Bore 6.125 in.; Stroke 6.875 in.; Displacement 1,820 cu. in.; Compression ratio 6.8:1; Dry weight 1,365 lb.; Weight per hp .99 lb.

PERFORMANCE: Takeoff power 1,425 hp at 51.5 in.; Hg. 2,700 rpm; Cruise 890 hp at 33 in.; Hg. 2,300 rpm; Fuel consumption .46 lb. per hp hr. at 60 percent power; Oil consumption .020 lb. per hp hr. at 89 percent.

EQUIPMENT: Carburetor Stromberg PD12K14; Ignition Dual Scintilla S9LU-5.

REMARKS: This engine is the latest in a long line of 1820 cu. in. powerplants that were first introduced more than ten years ago. This model is also built with 2-speed supercharger and optional reduction gear ratios.

R-3350-24W

TYPE: 18 cylinder, air-cooled, radial, CAA type certificate 218.

SPECIFICATIONS: Length 78.52 in.; Fuel grade 100/130; Bore 6.125 in.; Stroke 6.3125 in.; Displacement 3,350 cu. in.; Compression ratio 6.5:1; Dry weight 2,884 lb.; Weight per hp 1.1 lb.

PERFORMANCE: Takeoff power 2,500 hp at 2,800 rpm; Cruise 1,470 hp at 2,300 rpm; Fuel consumption .46 lb. per hp hr.; Oil consumption .015 lb. per hp hr.

EQUIPMENT: Ignition Scintilla DLN-9; Carburetor Bendix No. 135091 direct fuel injection.

R-3350-26W

TYPE: 18 cylinder, air-cooled, radial.

SPECIFICATIONS: Length 81.93 in.; Fuel grade 115/145; Bore 6.125 in.; Stroke 6.312 in.; Displacement 3,350 cu. in.; Compression ratio 6.5:1; Dry weight 2,848 lb.; Weight per hp 1.05 lb.

R-3350-30W-30WA, 85, 34

TYPE: 18 cylinder air-cooled radial.

SPECIFICATIONS: Length 89.53 in.; Fuel grade 115/145 octane; Bore 6.125 in.; Stroke 6.312 in.; Displacement 3,350 cu. in.; Compression ratio 6.7 to 1; Dry weight 3,514 lb.; Weight per hp .92.

PERFORMANCE: Takeoff power 3,250 hp at 2,900 rpm; Normal rated power 2,600 hp at 6,500 ft.

REMARKS: The R-3350-30W is a compound version of the R-3350-26W using three small turbines driven by exhaust gas and connected by fluid couplings to the crankshaft. This increases the takeoff power to 3,250 hp. Ignition system is Scintilla DLN-9; the carburetor, Stromberg PR58T1.

972TC18DA-1, -3

TYPE: 18 cylinders air cooled.

SPECIFICATIONS: Diameter 56.6 in.; Bore 6.125 in.; Stroke 6.312 in.; Displacement 3,350 cu. in.; Compression ratio 6.7 to 1; Fuel consumption 0.391 lb. per hp per hr. at 50 percent power.

REMARKS: Model DA-1 is in production for the Lockheed Super Constellation 1049C. Another version, the DA-2, is produced for the Douglas DC-7B.

The Directory Section on the following pages is aviation's most up-to-date authentic listing of airframe, engine and equipment manufacturers. Included are company names, company addresses and names of key executives, engineering and purchasing officers.

AIRFRAME MANUFACTURERS

Aero Design & Engineering Co.
Tulakes Airport
Oklahoma City, Okla.
P. O. Box 118
Bethany, Okla.

George T. Pew, Ch. Bd. of Dir.; R. T. Amis, Pres.; W. D. Amis, V.P.; A. H. Cronkhite, Ch. of Prod. Engrg.; Carl Wootten, Sales Mgr.; Budd Parks, Sec. Treas.; R. O. Absher, Prod. Mgr.; T. R. Smith, V.P.-Res. & Devl.; John Peoples, Purch.; Clay M. Pape, Ch. Pilot.

Aeronca Manufacturing Corp.
Municipal Airport
Middletown, O.

John A. Lawler, Pres.; S. J. Kuderer, Secy.-Treas.; Raymond F. Hermes, V.P.-Sales; J. C. Wander, V.P.-Mfg.; Harry Pratt, Qual. Mgr.; A. Page, Dir. Engrg. & Res.; Ross M. Paul, Materials Mgr.; Leon Wolfe, Ch. Engr.; G. Philip Stout, V.P.-Indus. Res. Lab., (IRL) Div., Baltimore, Md.

Avro Aircraft Limited
Box 4004, Terminal "A",
Toronto, Ontario.

Crawford Gordon, Jr., Ch. and Pres.; F. T. Smye, V.P. & Gen. Mgr.; J. C. Floyd, V.P., Engr.; H. R. Smith, V.P. Mfg.; J. A. Morley, V.P., Sales & Svc.

Beech Aircraft Corp.
Wichita, Kans.

O. A. Beech (Mrs. Walter H.), Pres.; John P. Gaty, V.P. & Gen. Mgr.; Frank E. Hedrick, V.P. & Co-ordinator; C. C. Pearson, V.P.-Mfg.; James N. Lew, V.P.-Contract Admin.; Lynn D. Richardson, V.P.-Mil. Sales.

Bell Aircraft Corp.
P. O. Box One
Buffalo 5, New York

Lawrence D. Bell, Pres.; Leston P. Faneuf, Gen. Mgr. & Treas.; William E. Kepner, Lt. Gen. USAF (Ret.), Exec. V.P.; Ray P. Whitman, 1st V.P.; Julius J. Domonkos, V.P., Mfg.; Roy J. Sandstrom, V.P., Engrg.; Harvey Gaylord, V.P., Helic.; William G. Gisel, Secy. & Cmpt.; John W. Rane, Jr., Dir. Cont. Admin.; G. B. Clark, Dir. Cont., Helicop.; John F. Strickler, Jr., Exec. Ch. Engr.

Bellanca Aircraft Corp.
New Castle, Del.

John Charles Redmond, Pres.; A. F. Baldini, Secy. & Treas.; B. J. Salvadori, Exec. Engr.; A. C. Ryan, Purch. Agt.; J. S. Malloy, Sales Mgr.

Boeing Airplane Co.
Box 3107
Seattle 14, Wash.

C. L. Egtvedt, Chmn.; William M. Allen, Pres.; Wellwood E. Beall, Senior V.P.; Edward C. Wells, V.P.-Engrg.; Fred P. Laudan, V.P.-Mfg.; Lysle A. Wood, Dir.-Pilotless Aircraft; C. W. Easton, Prod. Mgr.; Ralph Bell, Sales Mgr.; F. L. Dobbins, Mat'l. Mgr.

Briegleb Aircraft Co.
El Mirage Field
Adelanto, Calif.

William G. Briegleb, Pres.

CallAir

Afton, Wyo.

Canadair, Ltd.
P. O. Box 6087
Montreal, P. Q., Canada

John Jay Hopkins, Ch. of Bd. & Mg. Dir.; Lawrence B. Richardson, Vice-Ch. of Bd.; Peter H. Redpath, V.P. Sales; J. Geoffrey Notman, Pres. & Gen. Mgr.; John E. L. Duquet, O.C., V.P. & Gen. Counsel; W. K. Ebel, V.P., Engrg.; Robert A. Neale, V.P. Mfg.; E. B. Schaefer, Ch. Eng.; Karl H. Larsson, Ch. Sales Engr.

Cessna Aircraft Co.
5800 E. Pawnee Rd.
Wichita, Kans.

Dwane L. Wallace, Pres.; Frank Boettger, V.P.-Finance; Del Roskam, V.P.-Mfg.; Frank Martin, Sales Mgr.; Tom Salter, V.P.-Engrg.; Raymond G. Largent, Secy.

Chance Vought Aircraft, Inc.
P. O. Box 5907
Dallas, Tex.

C. J. McCarthy, Bd. Chmn.; F. O. Detweiler, Pres.; H. B. Sallada, V.P.; W. P. Thayer, Sales Mgr.

Chase Aircraft Co., Inc.
880 Doolittle Dr.
San Leandro, Calif.

Henry J. Kaiser, Ch. of Bd.; Clay P. Bedford, Pres.; J. F. Reis, V.P.; W. A. Cannon, V.P. & Treas.; Walston S. Brown, Secy.; E. R. Jones, Asst. Treas. & Cmpt.; E. R. Ordway, Asst. Treas. & Asst. Secy.; A. MacGregor, Asst. Secy. & Div. Cmpt.; Norman Howard, Asst. Secy.

Connecticut Research Associates, Inc.
Danbury Airport
Danbury, Conn.

Paul G. Annable, Pres.

Convair, Division of
General Dynamics Corp.
San Diego 12, Calif.

John Jay Hopkins, Ch. of the Bd. of General Dynamics; Joseph T. McNarney, Pres.; J. V. Naish, Exec. V.P.; Robert H. Biron, Jr., V.P.; A. C. Esenwein, V.P.; T. G. Lanphier, Jr., V.P. & Asst. to the Pres.; R. C. Sebold, V.P.; Robert B. Watts, V.P. & Gen. Counsel; D. T. Fisher, Controller; G. T. Bovee, Treas.; Edmund Burke, Secy.; J. G. Zevely, Dir. of Contracts; H. G. Golem, Dir. of Procurement; E. F. Wohl, Exec. Asst. to the Pres.; E. F. Jones, Asst. to the Pres.

The deHavilland Aircraft
of Canada Ltd.
Toronto, Ontario, Canada

P. C. Garratt, Man. Dir.; W. D. Hunter, Dir. Engrg.; C. H. Dickens, Dir. Sales; W. Burlison, Prod. Mgr.; A. F. MacDonald, Sales Mgr.; R. B. Imrie, Purch. Agt.

The Douglas Aircraft Co., Inc.
3000 Ocean Park Blvd.
Santa Monica, Calif.

Donald W. Douglas, Pres.; Donald W. Douglas, Jr., V.P., Military Relations; Nat Paschall V.P. Commercial Sales.

Fairchild Aircraft Div.
Fairchild Engine & Airplane Corp.
Hagerstown, Md.

W. L. Landers, V.P. & Gen. Mgr.; O. A. Berthiaume, Asst. Gen. Mgr.; P. A. Britner, Cmpt.; L. Fahnestock, Dir. Engrg.; Walter Tydon, Ch. Engr.; L. R. Hackney, Dir. of Sales; S. T. Mulroney, Mgr. of Materials.

Fletcher Aviation Corp.
190 W. Colorado St.
Pasadena 1, Calif.

Wendell S. Fletcher, Pres.; Maurice C. Fletcher, Secy.; James Hayward, Sales Mgr.; Loral D. Bonham, Ch. Engr.; L. C. Launer, Exec. V.P.

Goodyear Aircraft Corp.
1210 Massillon Rd.
Akron 15, O.

P. W. Litchfield, Pres. & Ch. of Bd.; T. A. Knowles, V.P. & Gen. Mgr.; Dr. K. Arnstein, V.P.-Engrg.; R. W. Richardson, V.P.-Sales; H. A. Delaney, P. A.

Grumman Aircraft Engineering Corp.

Bethpage, L. I., N. Y.

L. A. Swirbul, Pres.; L. R. Grumman, Ch. of Bd.; W. T. Schwendler, Exec. V.P.; E. Clinton Towl, Admin. V.P.; J. A. Stamm, Secy.; E. W. Poor, Treas.; R. L. Hall, V.P.-Engrg.; W. J. Hoffman, V.P.-Mfg. Engrg.; C. Kingsley, V.P. & Gen. Counsel; D. Rittenhouse, V.P.-Prod.; G. F. Titterton, V.P.-Contracts.

Helio Aircraft Corp.

Boston Metropolitan Airport
Norwood, Mass.

Lynn L. Bollinger, Pres. & Treas.; Otto C. Koppen, V.P.; Lawrence N. Smithline, Gen. Mgr. & Ch. Engr.

Hughes Aircraft Co.

Culver City, Calif.

Howard Hughes, Pres.; L. A. Ryland, V.P. & Gen. Mgr.; H. P. Hall, V.P. & Gen. Counsel; A. V. Haeff, V.P. & Dir. R & D; N. I. Hall, V.P. & Dir. Guided Missile R & D; R. B. Parkhurst, V.P. & Plant Mgr., Elec. Mfg.; R. J. Shank, V.P. & Dir. Radar R & D; W. W. Woodbridge, V.P. & Plant Mgr., Guided Missile Mfg. (Tucson, Ariz.).

Jamieson Aircraft Co., Inc.

3475 Sanitarium Rd.

Akron 12, Ohio

Charles M. Jamieson, Pres. & Ch. Engr.; E. A. Parker, V.P. & Sales Mgr.; E. S. Jamieson, Secy.-Treas.

Janier Aircraft Corp.

Marlton Medford Airport

Marlton, N. J.

Edward M. Lanier, Pres.

Lear, Incorporated

Aircraft Engineering Division

Santa Monica Airport

Santa Monica, California.

W. P. Lear, Ch. of Bd. & Dir. of Res. & Devel.; J. Nelson Kelly, Divn. Gen. Mgr.; Landis Carr, Asst. Divn. Gen. Mgr.; Elmer R. Easton, Divn. Sales Mgr.

Lockheed Aircraft Corp.

2555 No. Hollywood Way

Burbank, Calif.

Robert E. Gross, Pres.; Courtland S. Gross, Exec. V.P.; C. A. Barker, V.P. & Treas.; Cyril Chappellet, V.P.; Carl B. Squier, V.P.; Hall L. Hibbard, V.P., Engrg.; L. W. Wulfekuhler, Secy.; H. R. Campbell, Asst. Secy. & Asst. Treas.; D. E. Browne, Compt.; K. V. Sampson, Asst. Secy.; Leonard K. Schwartz, Dir. of Comm. Sales; C. F. Nielsen, Dir. of Mil. Sales; J. L. Wells, Gen. Purch. Agt.; D. J. Haughton, V.P. & Gen. Mgr. (Ga. Div.); B. C. Monesmith, V.P. & Gen. Mgr. (Calif. Div.); E. R. Quesada, V.P. & Gen. Mgr. Missile Systems Div.

The Glenn L. Martin Co.

Baltimore 3, Md.

George M. Bunker, Pres. & Ch. of Bd.; J. B. Wharton, Jr., V.P.-Finance; William B. Bergen, V.P.-Operations; Jess W. Sweetser, V.P.-Sales & Serv.; W. L. Lucas, Secy.-Treas.; E. G. Uhl, V.P.-Engrg.; D. W. Siemon, V.P.-Ind. Rel.; G. T. Willey, V.P.-Mfg.; G. B. Shaw, V.P.-Proc.; E. R. Uhlig, Cont. Maj. Allen Warfield Jr. Acting A.F. Plant Rep.

McDonnell Aircraft Corp.

P. O. Box 516

St. Louis 3, Mo.

James S. McDonnell, Jr., Pres.; Robert H. Charles, Exec. V.P.; Kendall Perkins, V.P., Engrg.; John F. Aldridge, V.P., Sales and Service; C. Warren Drake, V.P., Mfg.; Wm. R. Orthwein, Jr., V.P., Personnel & P.R.

Meyers Aircraft Co.

Box 721

Tecumseh, Mich.

Mooney Aircraft, Inc.

1405 So. Oliver

Wichita, Kan.

Charles G. Yankey, Pres.; Al W. Mooney, V.P., Gen. Mgr. & Ch. Engr.; Arthur B. Mooney, V.P.; W. L. McMahon, V.P.; W. W. Taylor, Sales Mgr.; J. W. Bays, Purch. Dir.

North American Aviation, Inc.

International Airport

Los Angeles 45, Calif.

J. H. Kindelberger, Ch. of Bd.; J. L. Atwood, Pres.; A. T. Burton, V.P. in Charge of Sales; R. H. Rice, V.P. & Ch. Engr.; J. S. Smithson, V.P., Mfg.; R. A. Lambeth, V.P.-Treas.; L. L. Waite, V.P., Missile-Control Equip. & Nuclear Engrg. & Mfg. Depts.; C. J. Gallant, V.P.-Gen. Mgr., Columbus, O., Div.; S. G. Anspach, Secy.-Ass't. Treas.

Northrop Aircraft, Inc.

1001 E. Broadway

Hawthorne, Calif.

Whitley C. Collins, Pres.; John W. Myers, V.P., Cust. Rel.; Roland J. Pagen, V.P. & Treas.; Kenneth P. Bowen, V.P., Mfg.; Edgar Schmued, V.P., Engrg.; John R. Alison, V.P., Admin.; George Gore, Secy. & Corp. Counsel; C. B. Spencer, Fact. Mgr.; F. W. Lloyd, Gen. Supt. Mfg.; D. W. Kraybill, Gen. Supt. Tooling; D. F. Beck, Ch. Purch. Agt.; Dr. William Ballhaus, Ch. Engr.; John Kerr, Ch. Proj. Engr.

Piper Aircraft Corp.

Lock Haven, Pa.

William T. Piper, Pres. & Gen. Mgr.; W. T. Piper, Jr., Exec. V.P.; T. F. Piper, V.P., Oper.; Howard Piper, V.P., Res. & Dev.; Walter Jamouneau, Secy. & Ch. Engr.; Charles Pool, Treas.; F. A. Estlick, Prod. Mgr.; J. W. Miller, Sales Mgr.; M. L. Blume, Purch. Dir.; Howard Markle, Ch. Inspec.

Rawdon Bros. Aircraft, Inc.

10412 E. Central

Wichita, Kan.

Herb Rawdon, Pres.; Gene Rawdon, V.P. & Ch. Engr.

Regent Aircraft Inc.

P. O. Box 629

Edinburg, Tex.

R. S. Johnson, Pres. & Gen. Mgr.; Raymond G. Lambe, Exec. V.P.; I. W. Bozeman, 1st V.P.; E. G. Admunsen, Treas.; T. E. Mosheim, Secy. & Gen. Counsel; Frank R. Oradat, Jr., Ch. Engr.

Republic Aviation Corp.

Farmingdale, L. I., N. Y.

Mundy I. Peale, Pres.; W. Bain, V.P. & Gen. Mgr.; John J. Ryan, V.P. (Ind. Rel. & Legal); Martin F. Scanlon, V.P. (Special Assignments); A. Kartveli, V.P. & Ch. Engr.; Tom Murphy, V.P.; L. L. Brabban, V.P. & Sales Mgr.; Thomas Davis, Treas.; Ken Ellington, Asst. to Pres.; John Thompson, Secy.; Thomas Davis, Treas.; Mark Veckman, Asst. Secy. & Treas.; H. C. Pillman, Asst. Secy.-Treas.; Nils Lou, Factory Mgr.

Ryan Aeronautical Co.

Lindbergh Field

San Diego, Calif.

T. Claude Ryan, Pres.; G. C. Woodard, Exec. V.P.; Earl D. Prudden, V.P., Gen. Admin.; L. M. Limbach, V.P.-Mfr.; C. A. Stillwagon, Secy.-Treas.; Bruce Smith, Dir. of Engrg.; S. C. Breder, Metal Products—Cust. Serv. Dir.; H. L. Fontaine, Act. Controller.

Taylorcraft, Inc.

Conway-Pittsburgh Airport

Conway, Pa.

B. J. Mauro, Pres.; C. G. Taylor, V.P.; C. Hodgekin, Prod. Mgr.; J. Gilberti, Ch. Engr.; P. L. DeBor, Purch.; R. Galvin, Sales Mgr.

Temco Aircraft Corp.

P. O. Box 6191

Dallas 2, Tex.

Robert McCulloch, Pres. & Gen. Mgr.; H. L. Howard, Exec. V.P. and Treas.; J. A. Maxwell, Jr., Vice Pres., Mfg.; Clyde Williams, V.P. & Compt.; I. Nevin Palley, V.P. Engrg.

POWERPLANT MANUFACTURERS

Aerojet General Corp.

6352 N. Irwindale Ave.

Azusa, Calif.

D. A. Kimball, Pres.; A. H. Rude, Exec. V.P.; W. E. Zisch, V.P. & Gen. Mgr.; T. E. Bechan, Asst. Secy.-Asst. Treas.; W. L. Gore, Dir. of Sales; K. F. Mundt, Dir. of Mfg.

Aircooled Motors, Inc.

Liverpool Rd.

Syracuse 8, N. Y.

C. F. B. Roth, Pres. & Dir.; R. W. Conkle, Works Mgr.; G. T. Bynum, Ch. Engr.

Allis-Chalmers Manufacturing Co.

Box 512

Milwaukee 1, Wis.

Allison Div.,

General Motors Corp.

P. O. Box 894

Indianapolis 6, Ind.

E. B. Newill, Gen. Mgr.; W. O. Watson, Mgr., Aircraft Sales & Contracts; R. M. Hazen, Dir. of Engrg.

Bell Aircraft Corp.

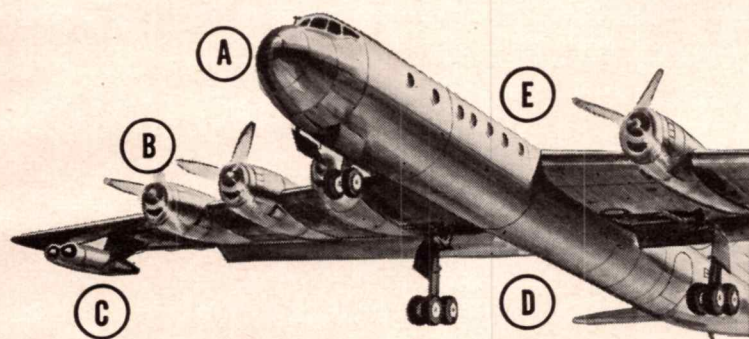
P. O. Box One

Buffalo 5, N. Y.

Lawrence D. Bell, Pres.; Leston P. Faneuf, Gen. Mgr. & Treas.; William E. Kepner, Lt. Gen. USAF (Ret.), Exec. V.P.; Ray P. Whitman, 1st V.P.; Julius J. Domonkos, V.P., Mfg.; Roy J. Sandstrom, V.P., Engrg.; Harvey Gaylord, V.P., Helicop.; William G. Gisel, Secy. & Compt.; John W. Rane, Jr., Dir. Cont. Admin.; G. B. Clark, Dir. Cont., Helicop.; John F. Strickler, Jr., Exec. Ch. Engr.



This is Bendix in Aviation



The airplane illustrated is a composite since, obviously, no single plane carries all of the Bendix equipment on these pages. However, many Bendix products fly with every U. S. fighting plane and are used extensively on commercial, executive and private planes as well.

A

Radio Noise Filters
Switches
Flow Equalizers
Vacuum Operated Instruments
Filters for Aircraft Heaters
(Auxiliary, Engine, Cabin)
Pneumatic System Filters
Dynamotors
Blower Motors
Band-Change Motors
Booster Dynamotors
Actuator Motors
Special Inverters
Aircraft Interphone Systems

Radar
Radio Transmitters
Radio Receivers
Radio Communication Systems
Electronic Navigational Equipment
Automatic Radio Compass
VHF Omni-Directional Range
Equipment
Distance Measuring Equipment
Automatic Pilot and Flight Path
Control Equipment
Autosyn* and Magnesyn* Remote
Indicating Systems For
Fuel Flow • Fuel Pressure •
Hydraulic Pressure • Liquid
Level • Manifold Pressure •
Oil Pressure • Position •
Temperature • Torque Pressure
• Water Pressure

B

Bendix* Starter Drives
Magnetos
Ignition Harnesses
Booster Coils
Igniter Plugs
Ignition Analyzer
Low and High Tension Ignition
Systems for Reciprocating Engines
Radio Shielding Harnesses
Hydraulic—Line Type Filters
Reservoir—Line Type Filters
Vent—Line Type Filters
Fuel System Filters
De-Icing System Filters
Alternators
Fault Protection Systems
Generators
Inverters
Line Relays
Overvoltage Protectors
Reverse Current Cutouts
Voltage Booster Dynamotors
Voltage Regulators
Power Failure Indicators
Engine Starting Equipment, including
Booster Coils • Induction
Vibrators • Relay Switches •
Starters
Automatic Engine Power Controls
Automatic Engine Boost Controls
Propeller Governor Controls
Supercharger Regulator Controls
Injection and Float Type Carburetors
Direct Injection Fuel Systems,
including
Distributing Pumps • Regulator
Units • Injector Nozzles •
Fuel Supply Pumps
Speed-Density Fuel Metering Systems
for Jet and Reciprocating Engines
Water Injection Systems

C

Ignition Systems for Jet and
Turbine Engines
Igniter Plugs for Jet and Turbine
Engines
Jet Engine Starters and Generators
Speed-Density Fuel Metering Systems
Duplex Nozzles

D

Fuel Flow Totalizing Systems
Manifold Pressure Gauges
Electric Tachometer Systems
Warning Units
Accelerometers
Airspeed Indicators
Attitude Horizon Indicators
Driftmeters
Dual Radio and Magnetic Compass
Indicators
Gyro Flux Gate* Compasses
Gyro Horizon Indicators
Magnetic Compasses
Rate of Climb Indicators
Turn and Bank Indicators
ODR Components
Sextants
Control Panels

E

Brake Lining
Hydraulic Actuating Cylinders
Power Brake Valves
Shock Absorbing Struts
Shoe and Segmented Rotor Type
Brakes
Wheels
Master Cylinders
Hydraulic Brake Control Valves

Electrical Connectors
Small Electric Actuators
4-Way Hydraulic Valves
Hydraulic Accumulators
Hydraulic Hand Pumps
Position Light Flashers
Pressure Control Valves
Electric Timing Devices
Hydraulic Equipment, including
Pumps • Valves
Air Pressurization and Ice Elimination
Equipment, including
Electronic and Mechanical De-Icer
System Timers • Oil Separators
• Pumps • Valves • Pressuriza-
tion and Control Units

ADDITIONAL AVIATION PRODUCTS

Beacons
Telemetry Equipment
Missile Guidance Systems
Micro-Wave Equipment
V. H. F. Ground Direction Finders
G. C. A. Ground Controlled Approach
Radar
Long Range Search and Surveillance
Radar
G. C. A. Ground Controlled Approach
System
Actuators—Linear and Rotary
Differential Pressure Switches
Oxygen Regulators
Gear Boxes
Flexible Drive Shafts
Special Purpose Electron Tubes,
including
Amplifier Tubes • Counter Tubes
• Gas Filled Control Tubes •
Klystron Tubes • Rectifier Tubes
• Spark Gaps • Temperature
Tubes • Voltage Regulator Tubes
Precision Components for Servo-
mechanism and Computing Equip-
ment, including
Autosyn Synchrons—(transmitters,
receivers, differentials, control
transformers and resolvers) •
Amplifiers • Low Inertia Motors
• Servos • Transformers •
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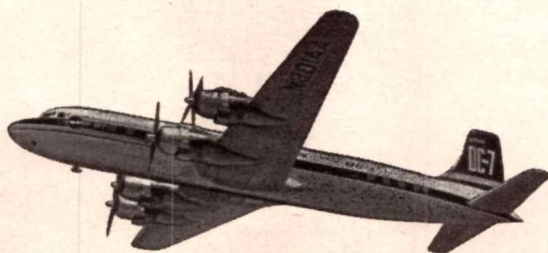
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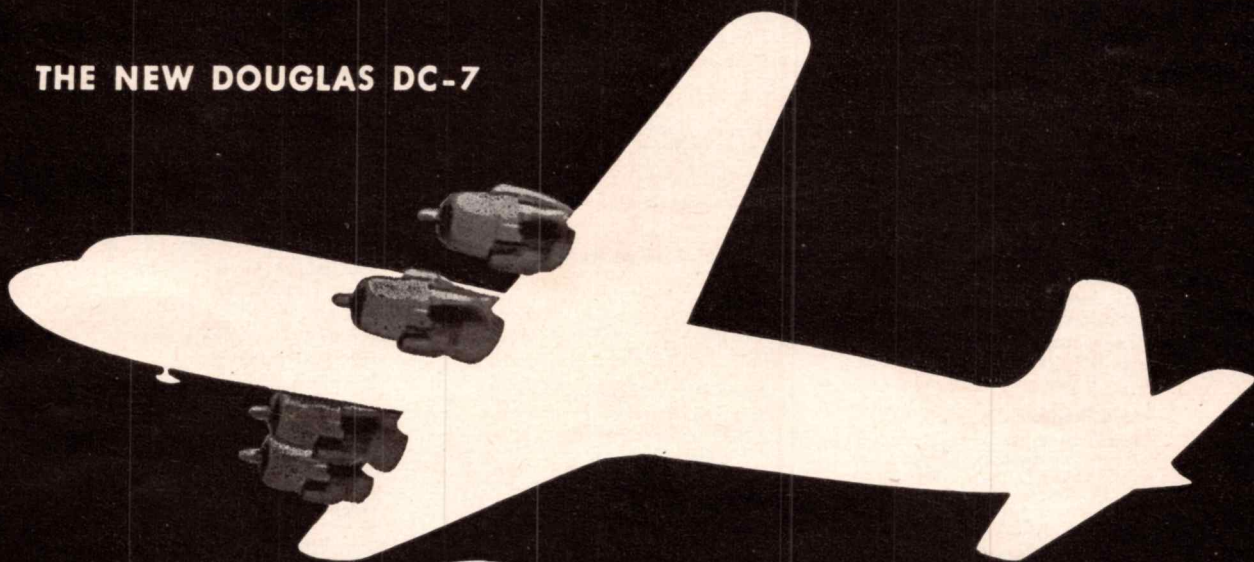
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mel, V.P.; A. B. Conroy, Treas. &
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SPECIFICATIONS ★ TYPE D-638

Weight: 17.5 pounds ★ **Maximum Capacity:** 6.5 HP

Volts: 200 A.C. ★ **Amperes:** 20 at 6.5 HP ★ **Cycles:** 400

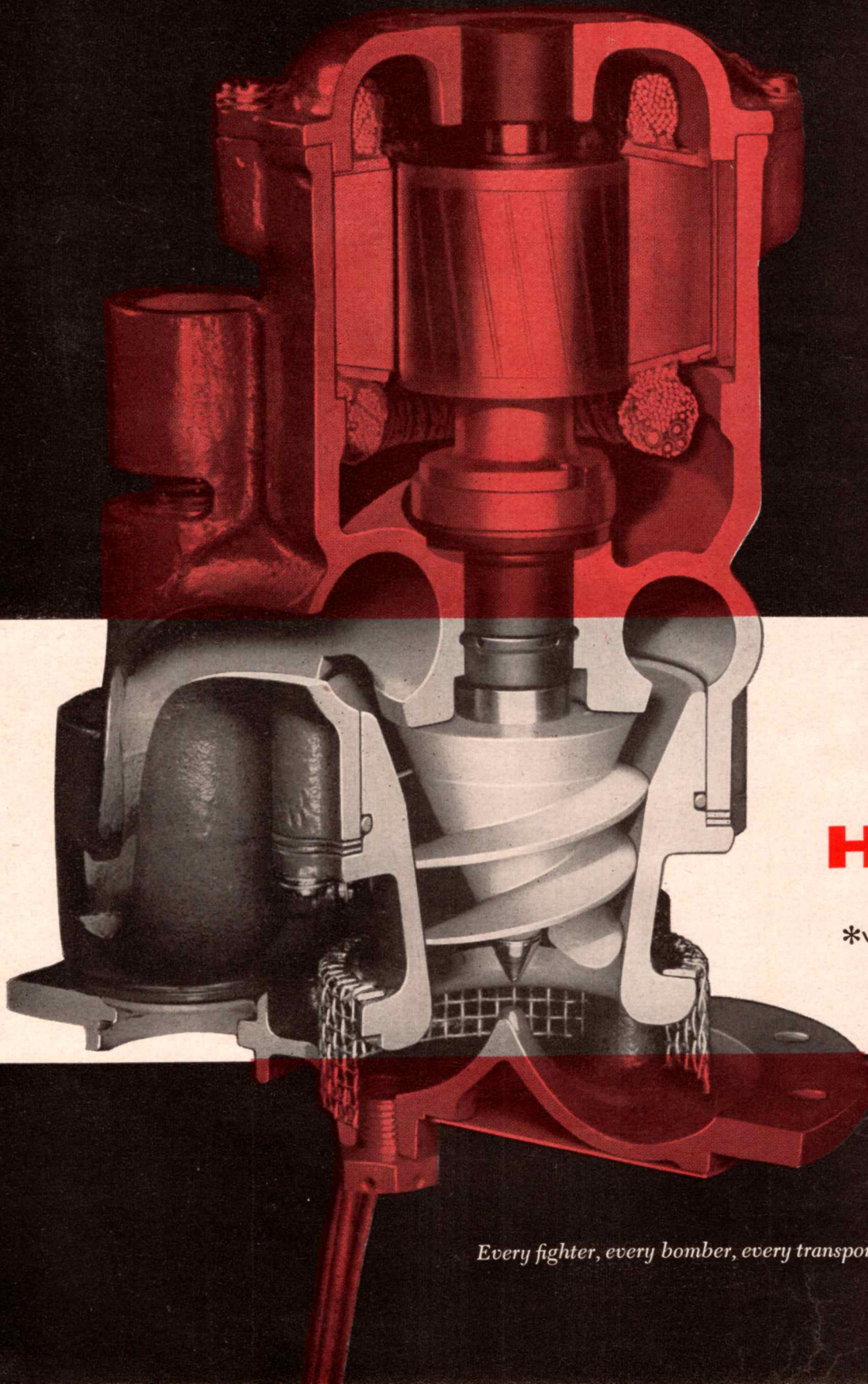
Duty cycle: 3.0 seconds at 6.5 HP
15.0 seconds at 1.5 HP

Continuous rating: 5 HP at 2300 r.p.m., 15.8 amperes, 200 volts.

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Puzzle for Fuel Booster Pump Experts:



HY-V/L*
pump

*vapor-liquid ratio

Every fighter, every bomber, every transport is Hydro-Aire equipped.

? FIND THE VAPOR SEPARATOR

The opposite page shows a cutaway of Hydro-Aire's HY-V/L Fuel Booster Pump: Model 6227.

Here are the advantages this pump offers:

- It is lighter, less complex and more compact.
- It is more efficient... *uses less power* ... gives excellent overall climb performance.
- It recovers immediately, even after a momentary power failure or inlet unporting.
- It works equally well with different types of fuel ... or even with contaminated fuel.
- Most important: The HY-V/L has *design predictability*. That means it can be tailored to meet your exact requirements. We can actually provide you with a simple set of charts that will enable you to determine weight, power requirement, size ... all the important specifications for your particular application.

All these advantages stem from the fact that the HY-V/L design completely eliminates the old vapor separator used in conventional fuel booster pumps. This is done by compressing the fuel vapors back into the liquid *inside the pump*.

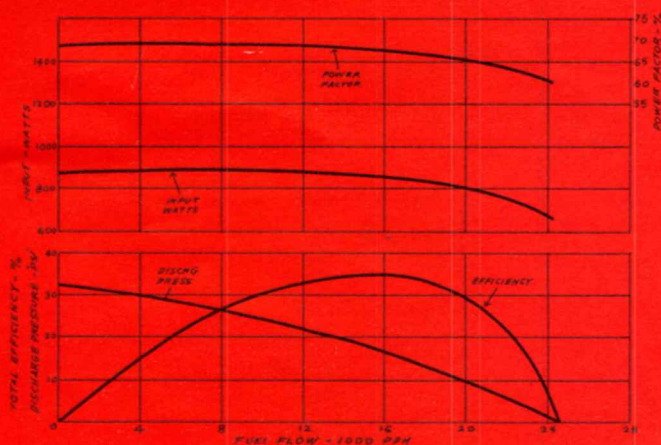
Yes, the most startling feature of Hydro-Aire's HY-V/L Fuel Booster Pump is something that isn't there!

PERFORMANCE CURVES OF HY-V/L PUMP, MODEL 6227

AT SEA LEVEL

POWER: 3 Phase 400 c. 200 V. AC.

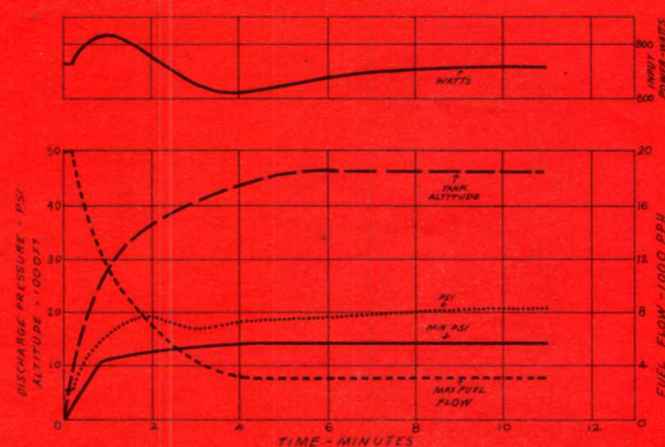
FUEL: MIL-F-5624A (JP-4), 61°F.



AT ALTITUDE

POWER SOURCE: 200 Volts/400 CPS.

FUEL: MIL-F-5624A (JP-4).



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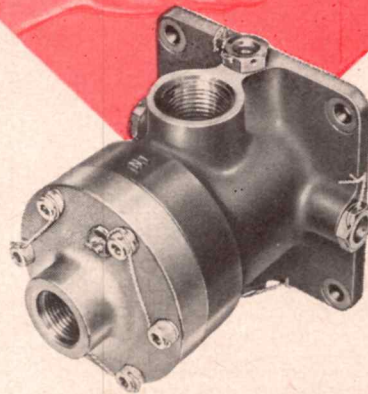
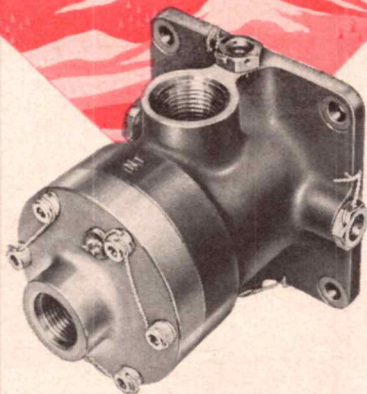
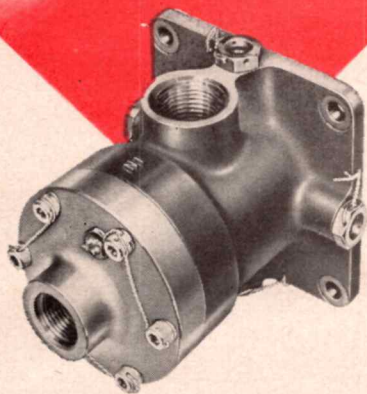
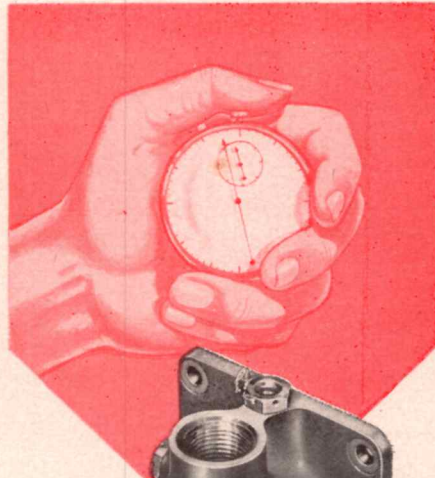
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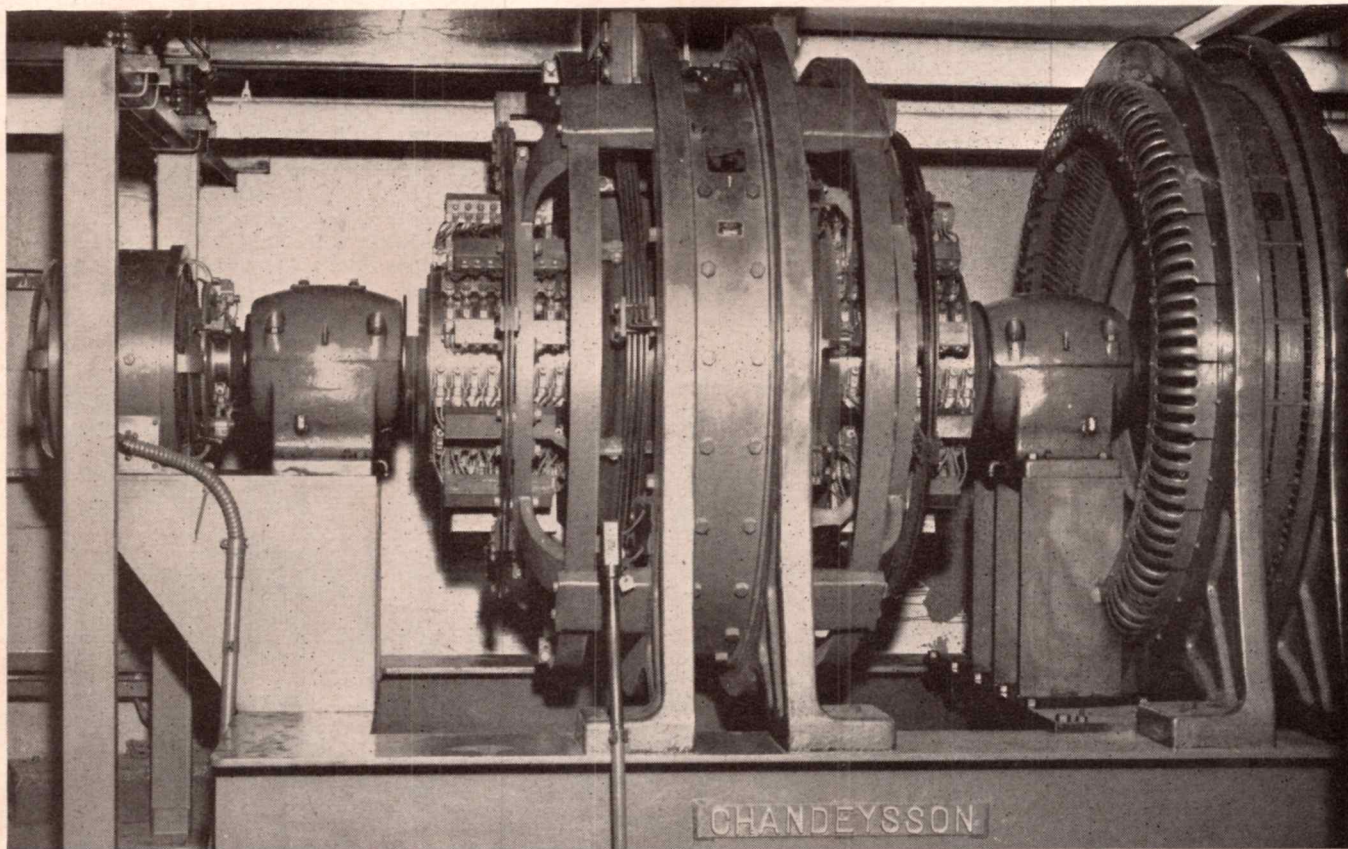
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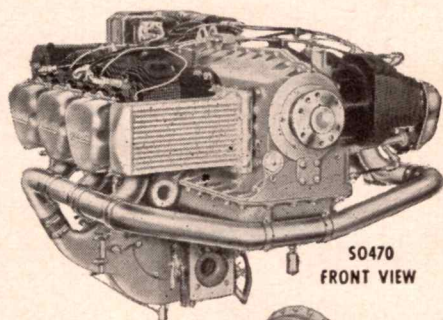
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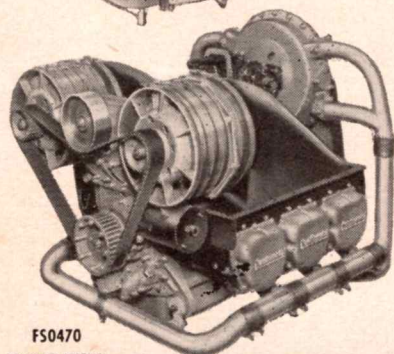
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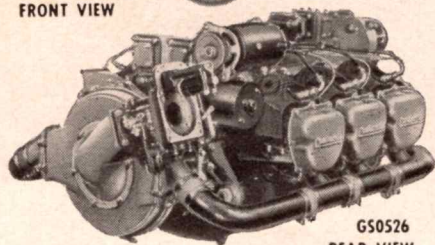
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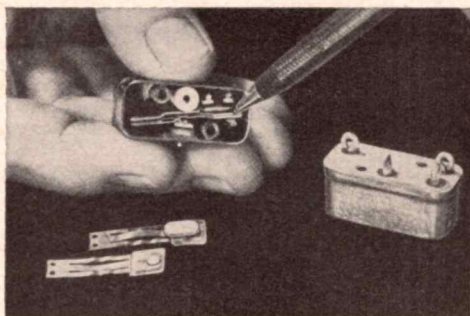
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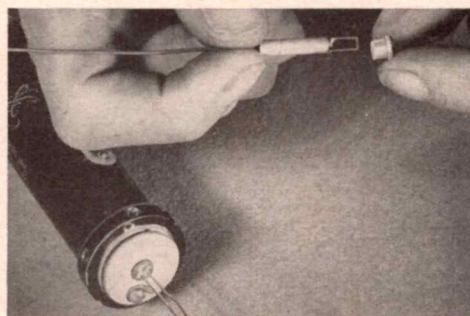
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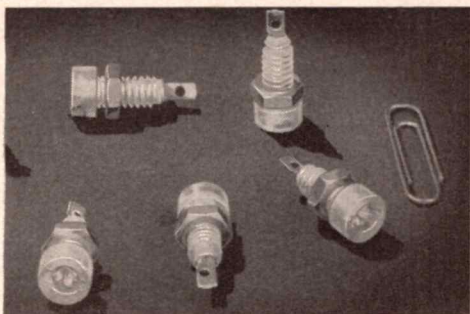
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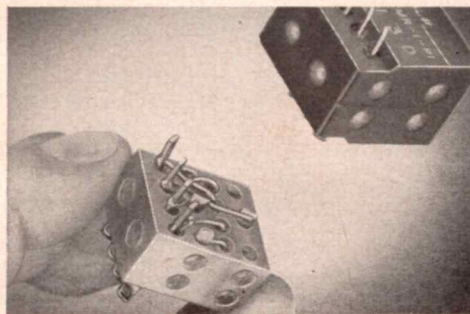
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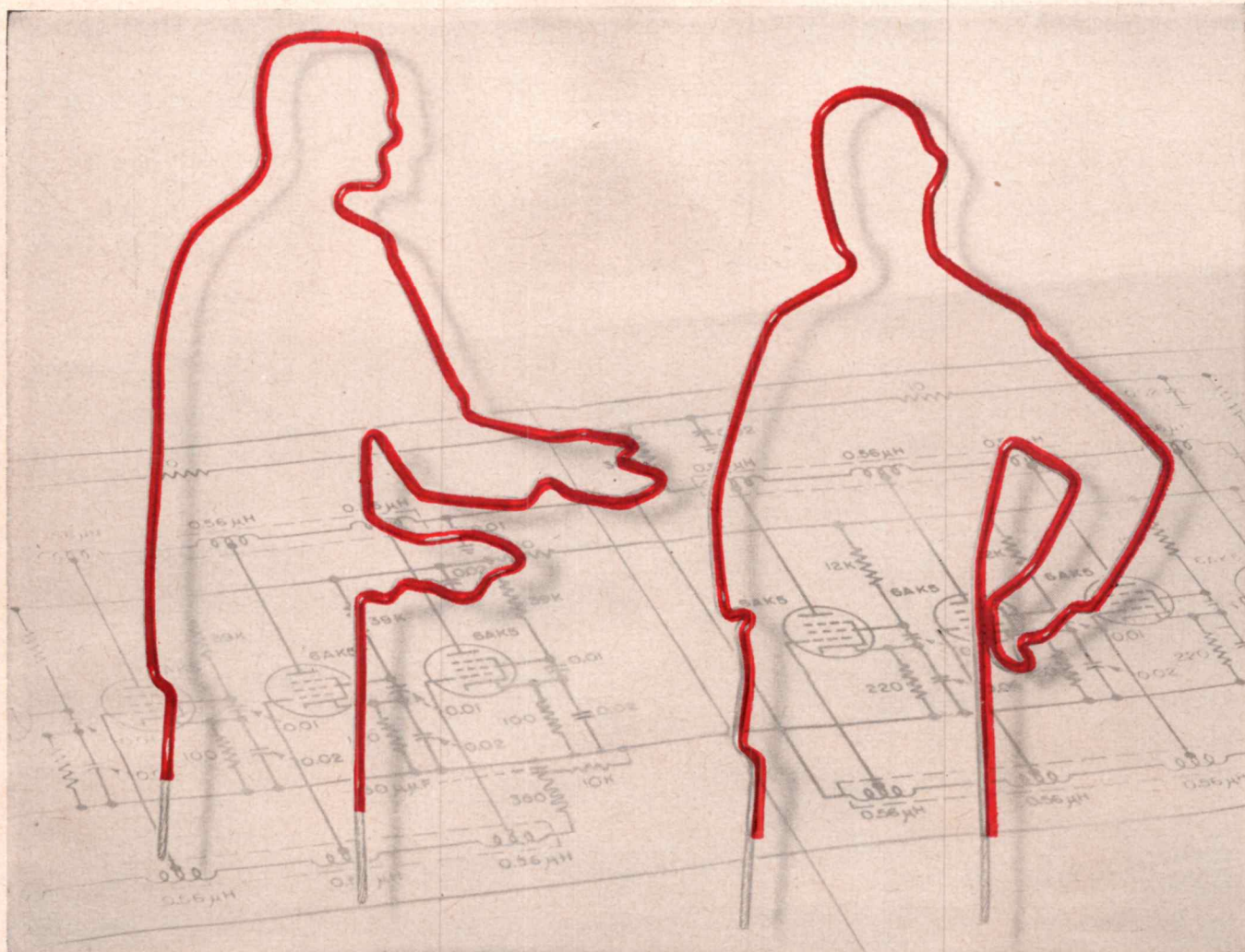


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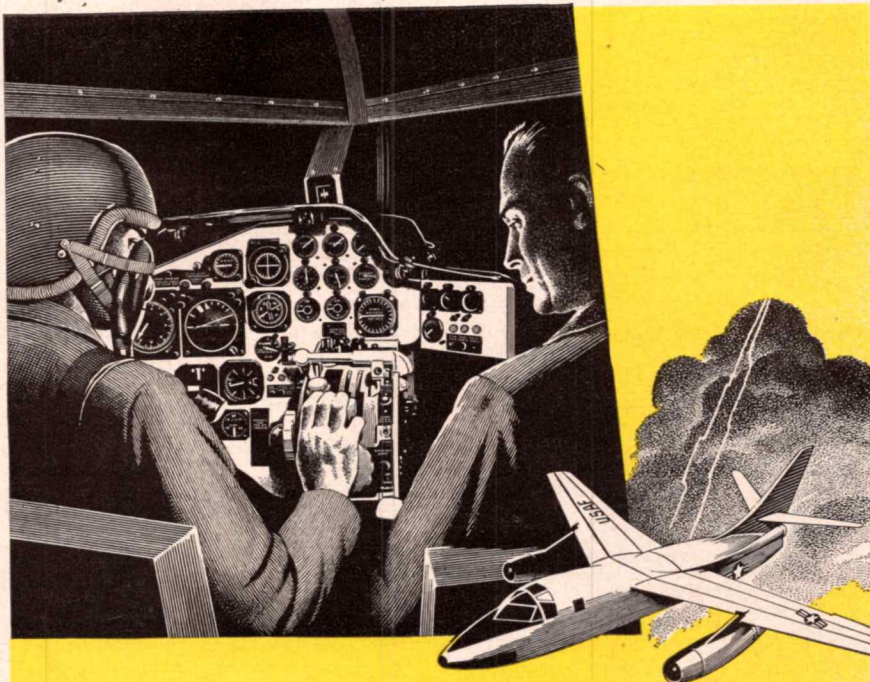
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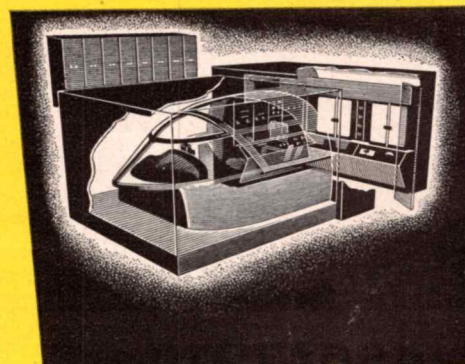
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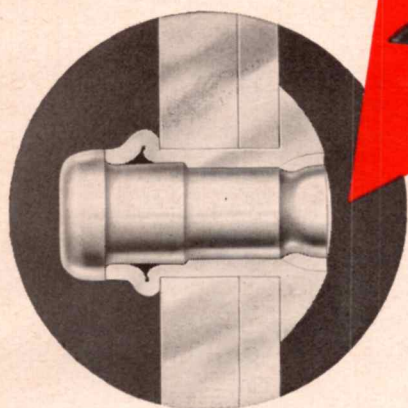
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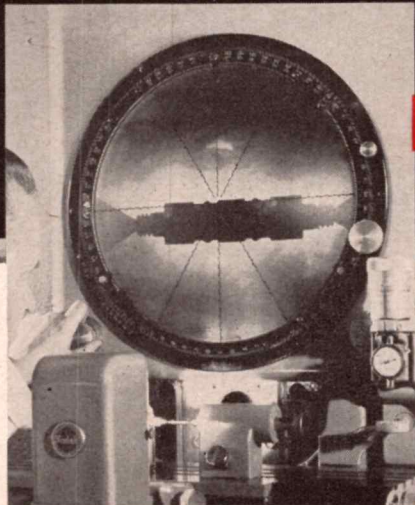
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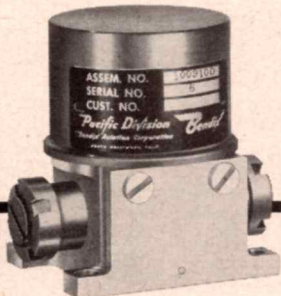
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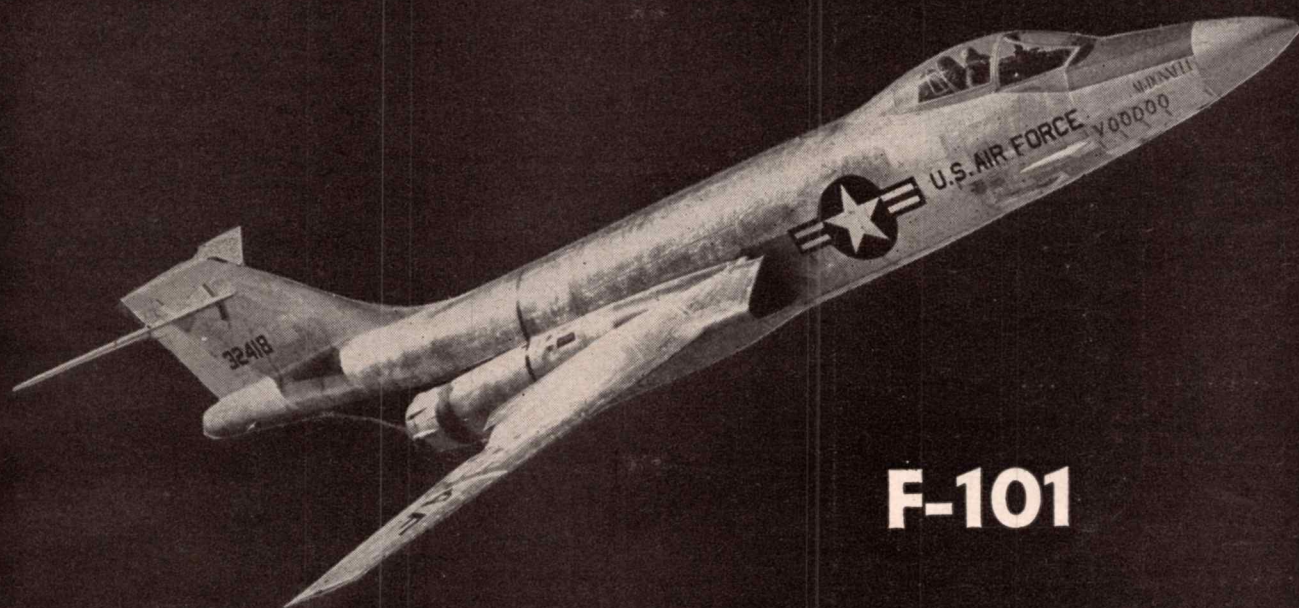
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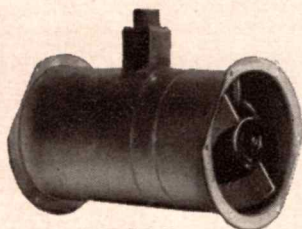
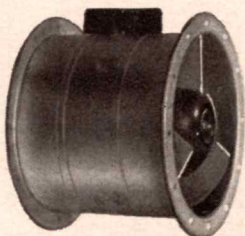
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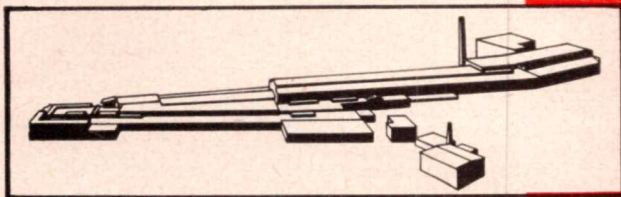
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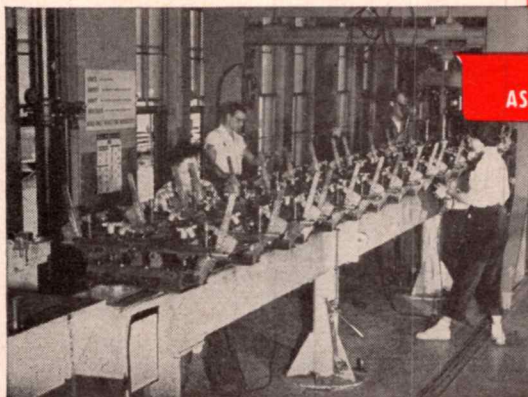
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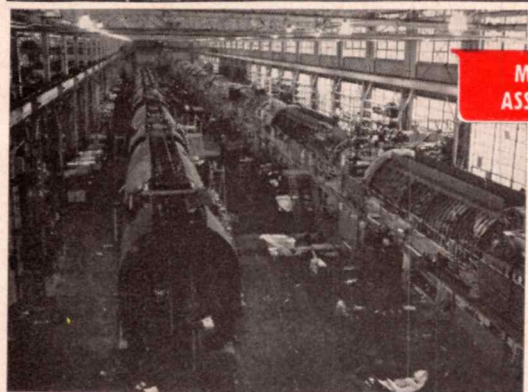
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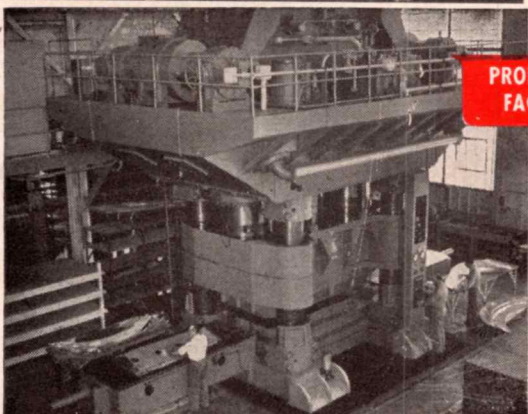
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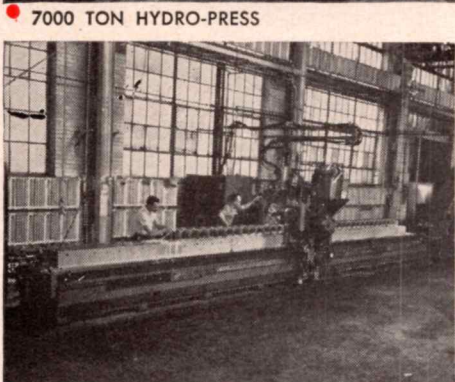


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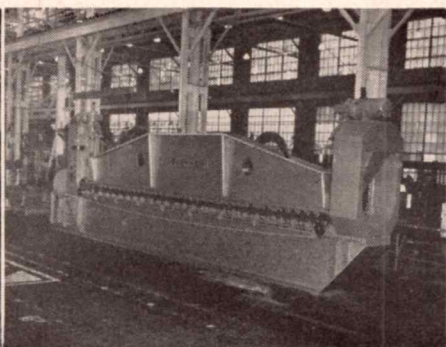
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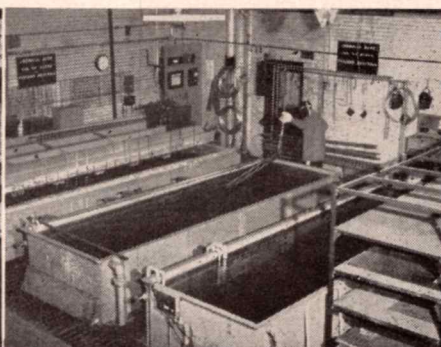
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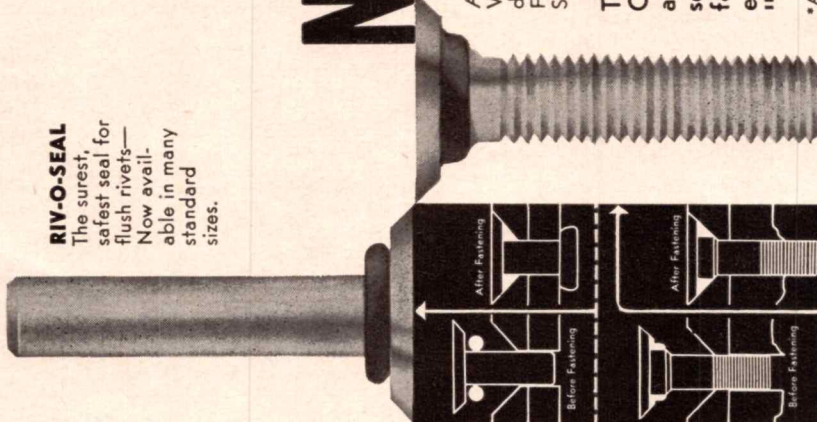
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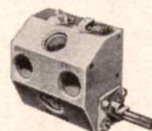
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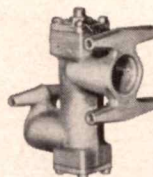
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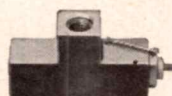
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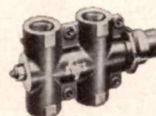
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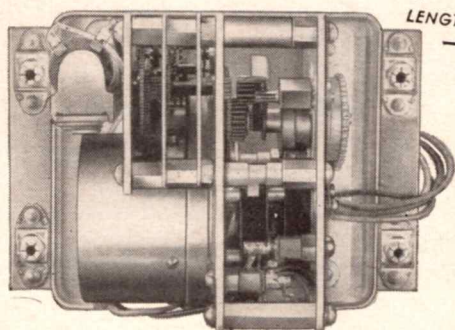
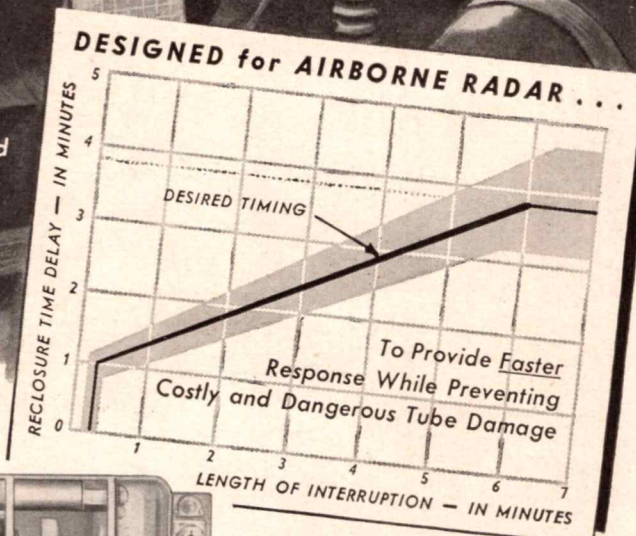
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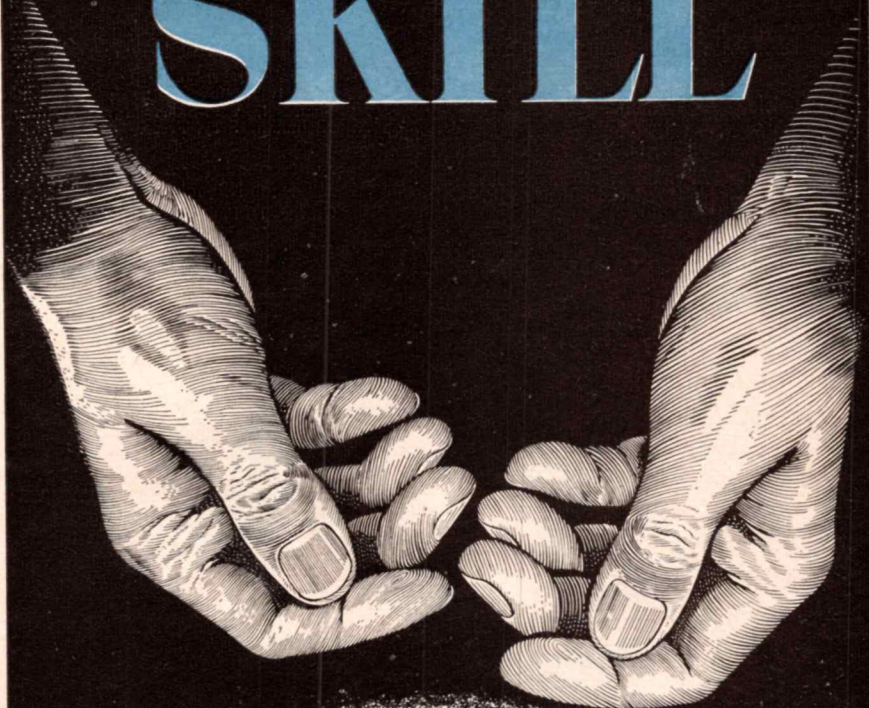
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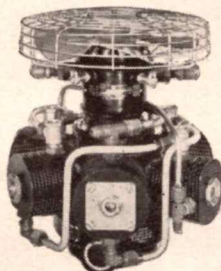
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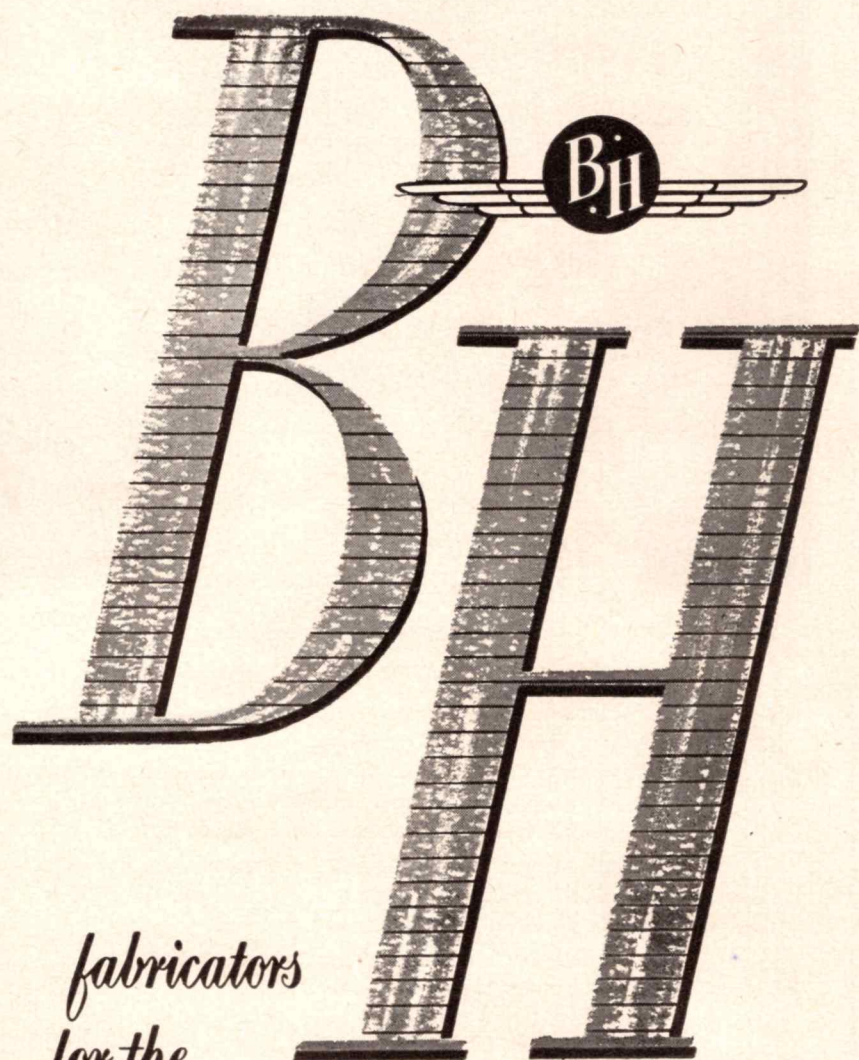
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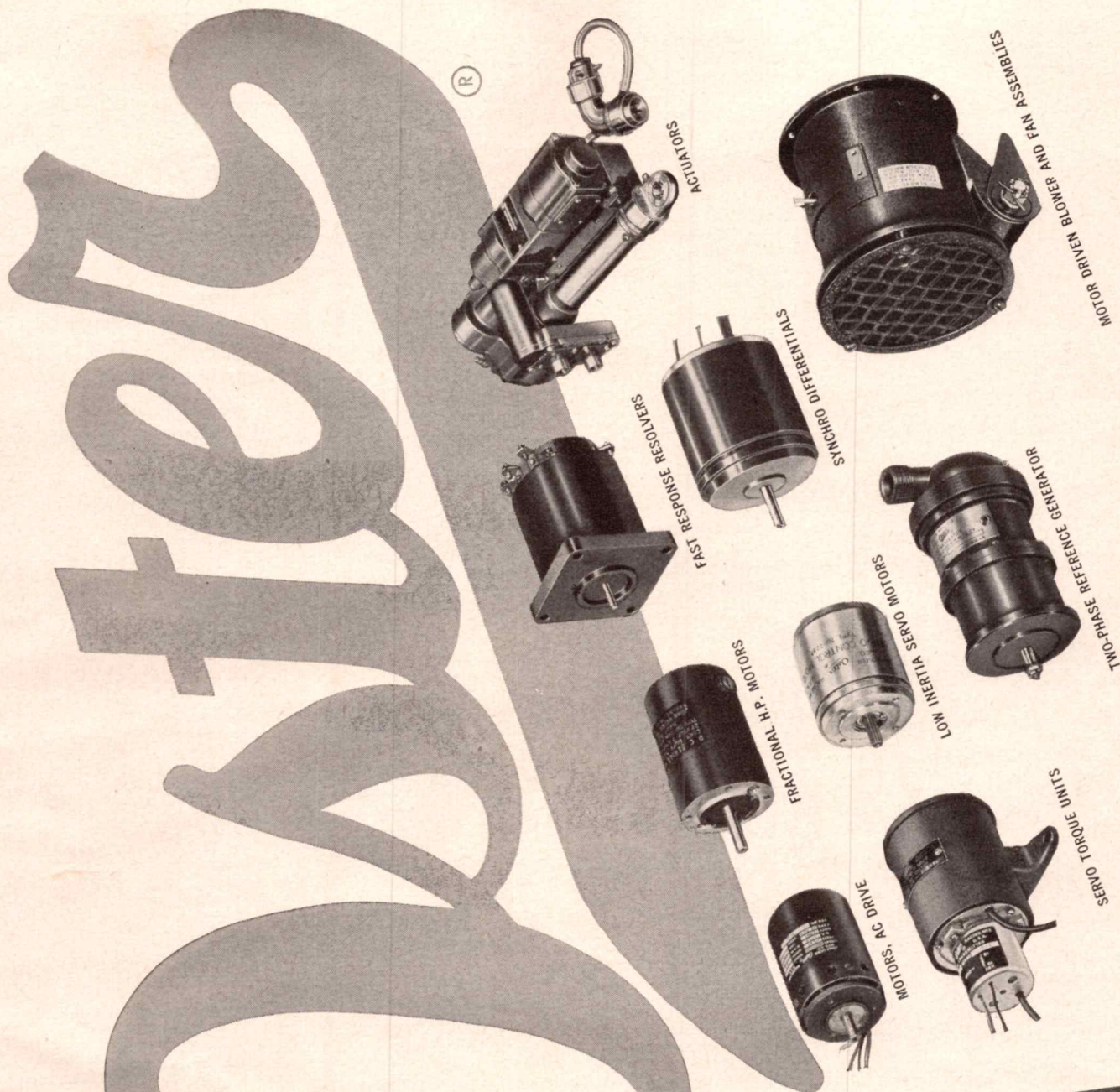
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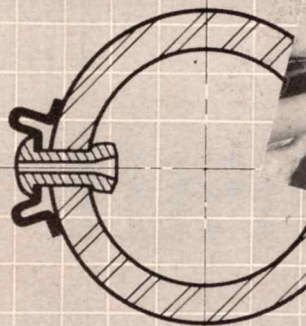
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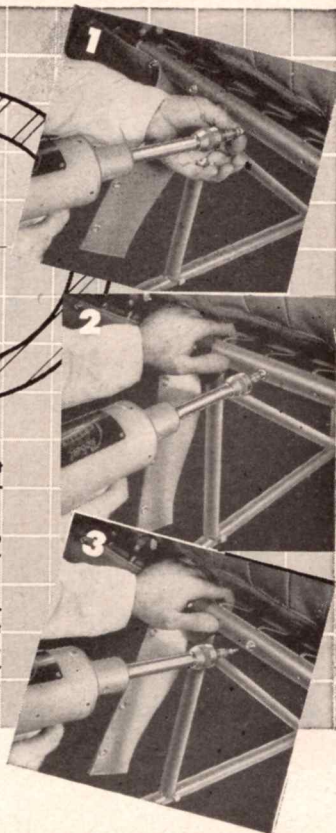
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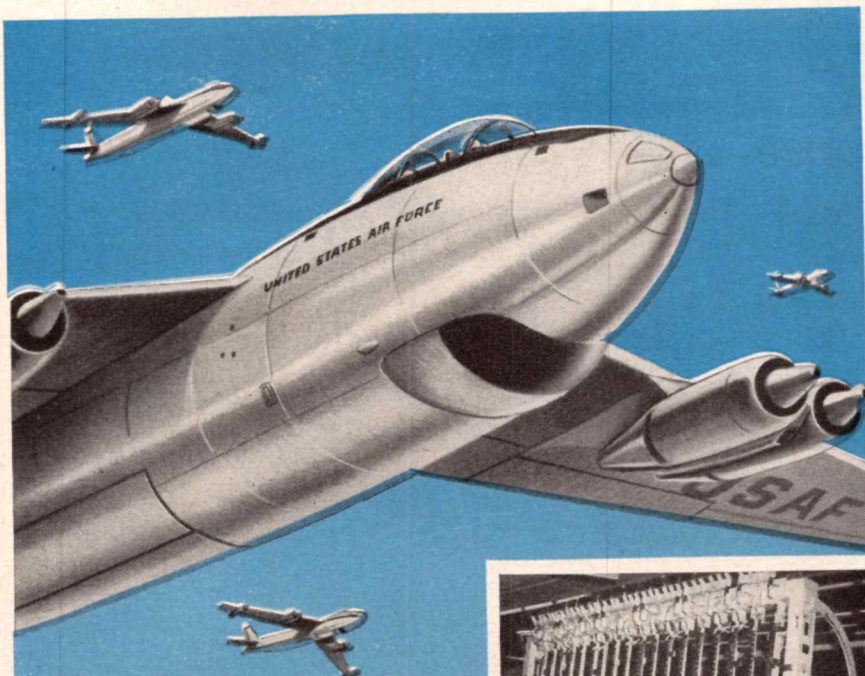
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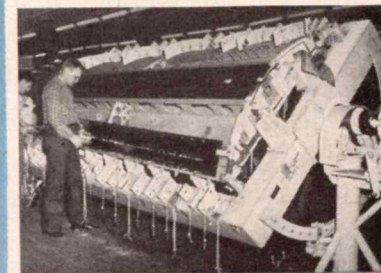
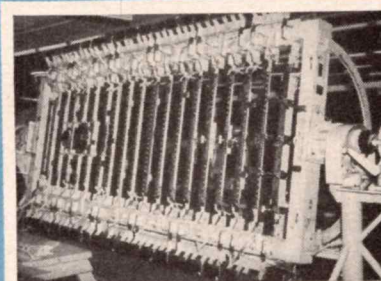
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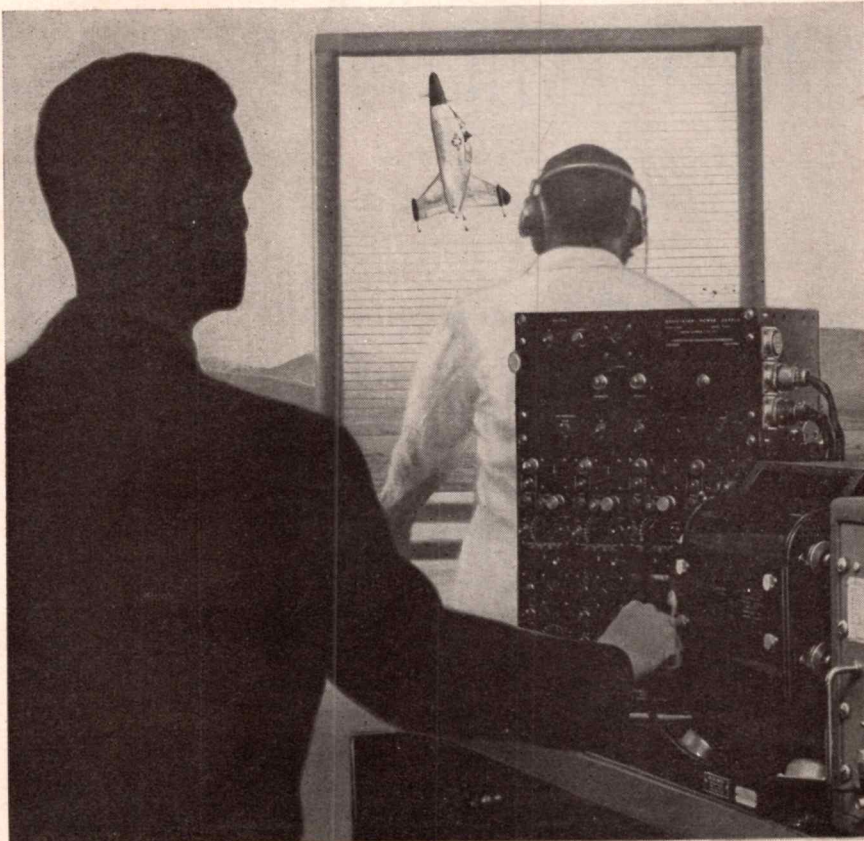
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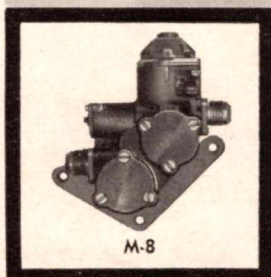
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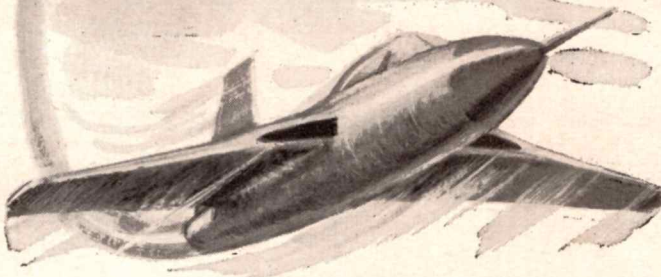
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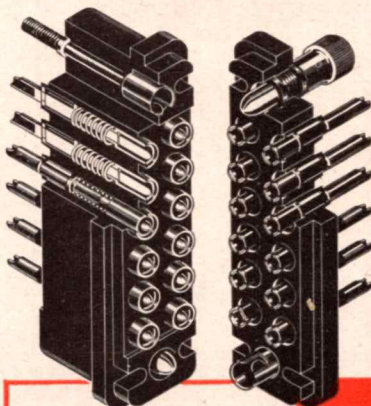
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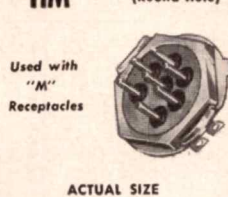
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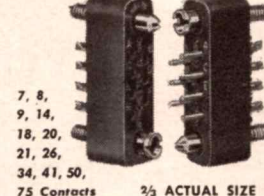
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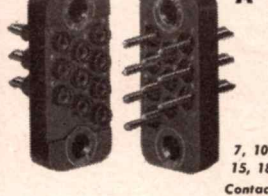
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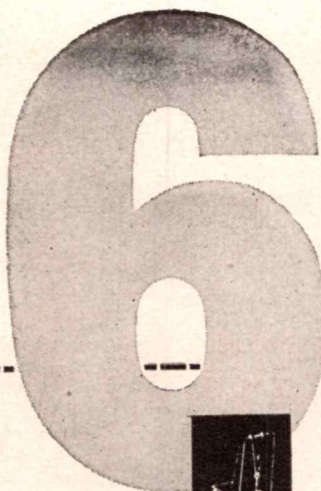
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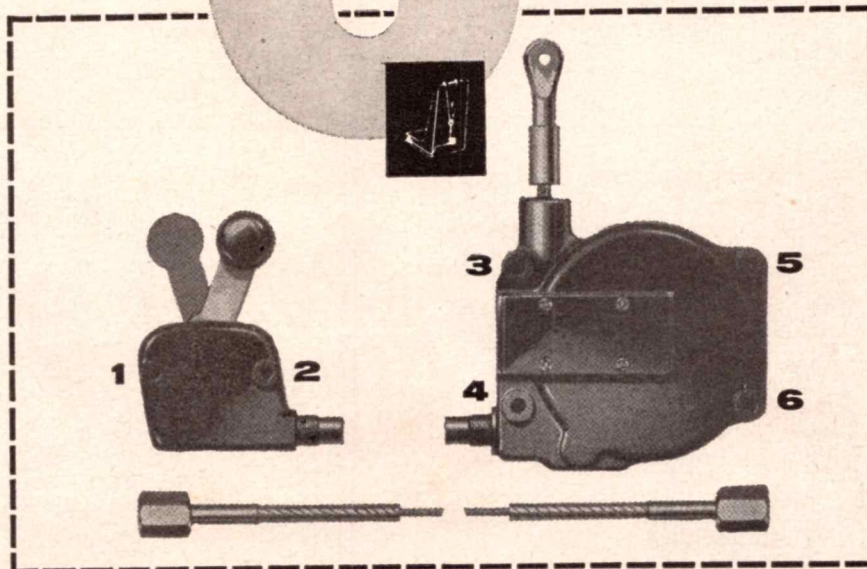
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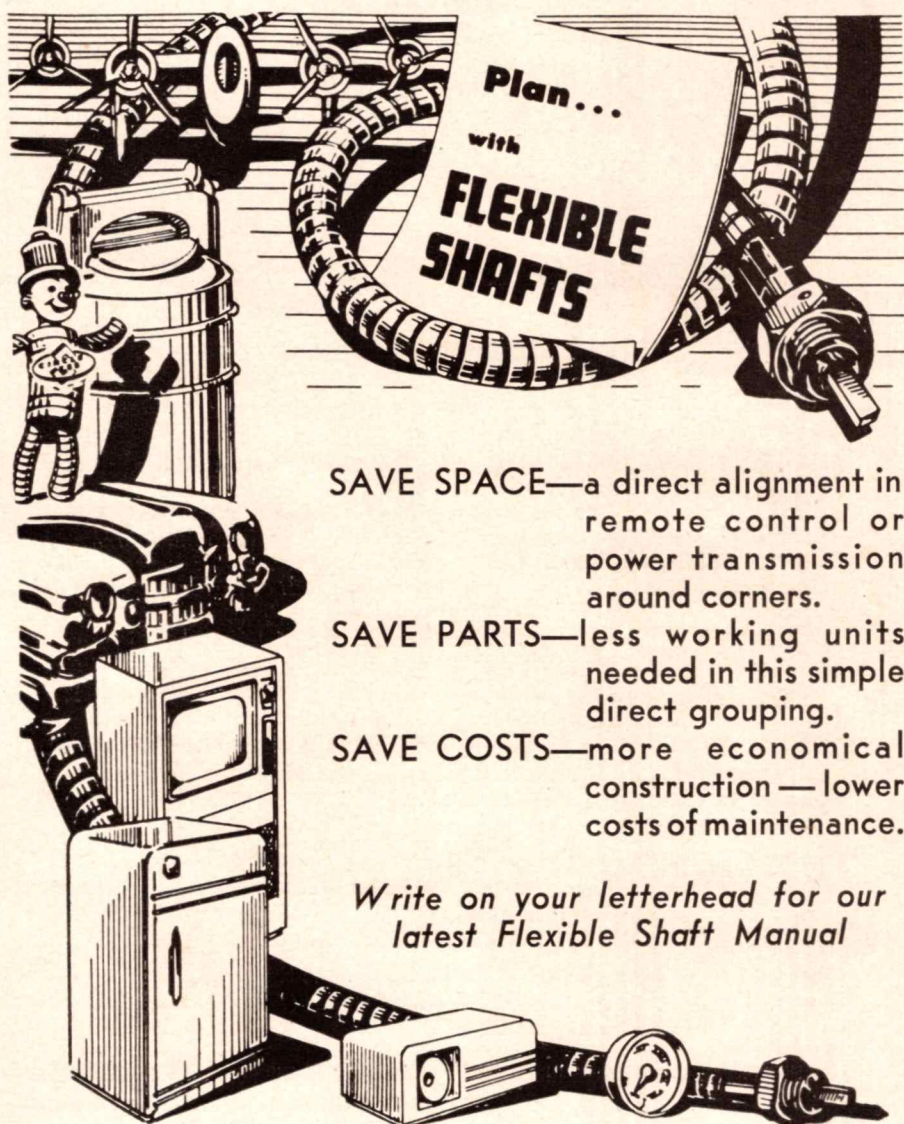
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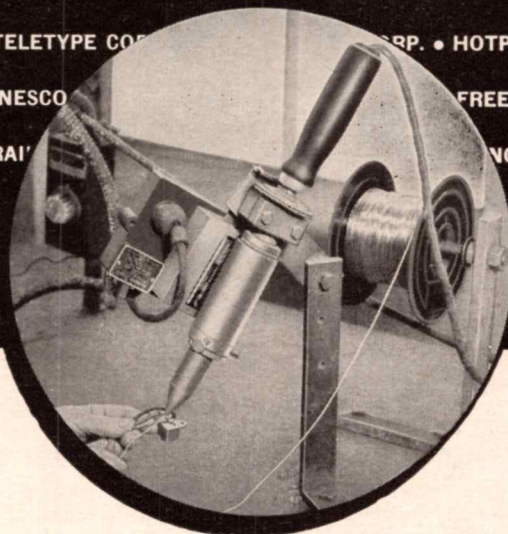
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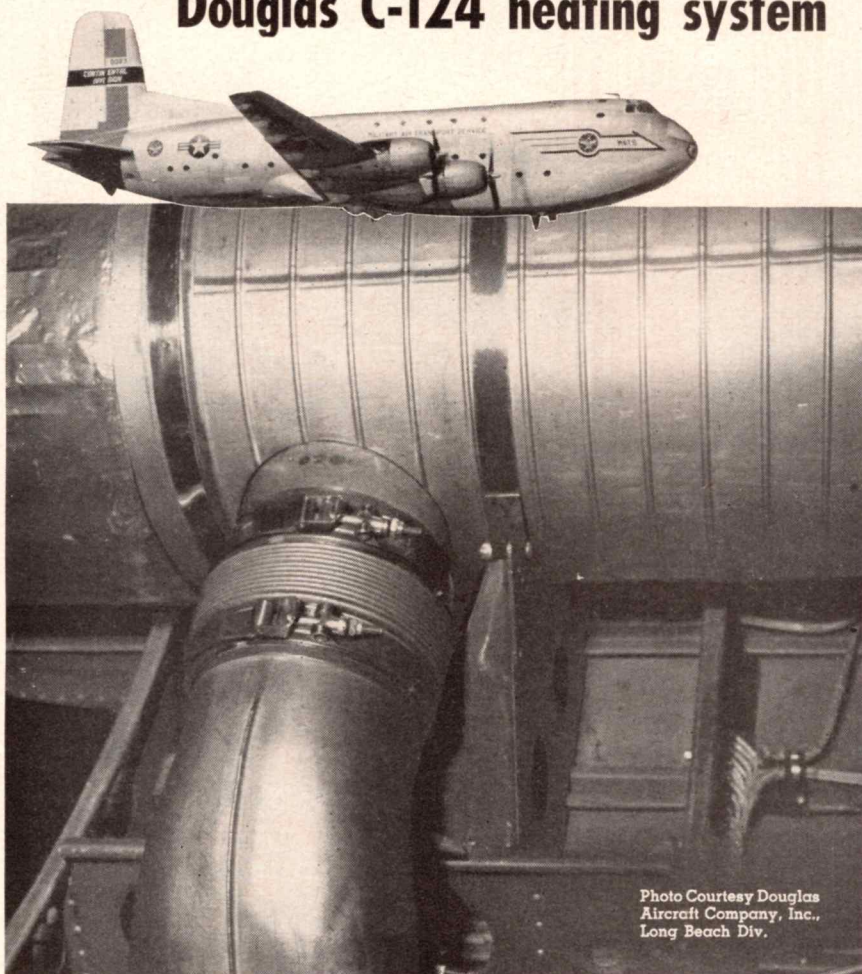
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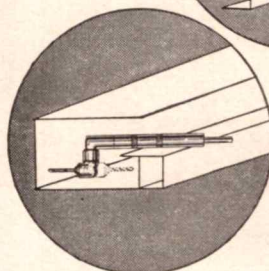
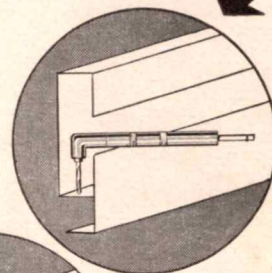
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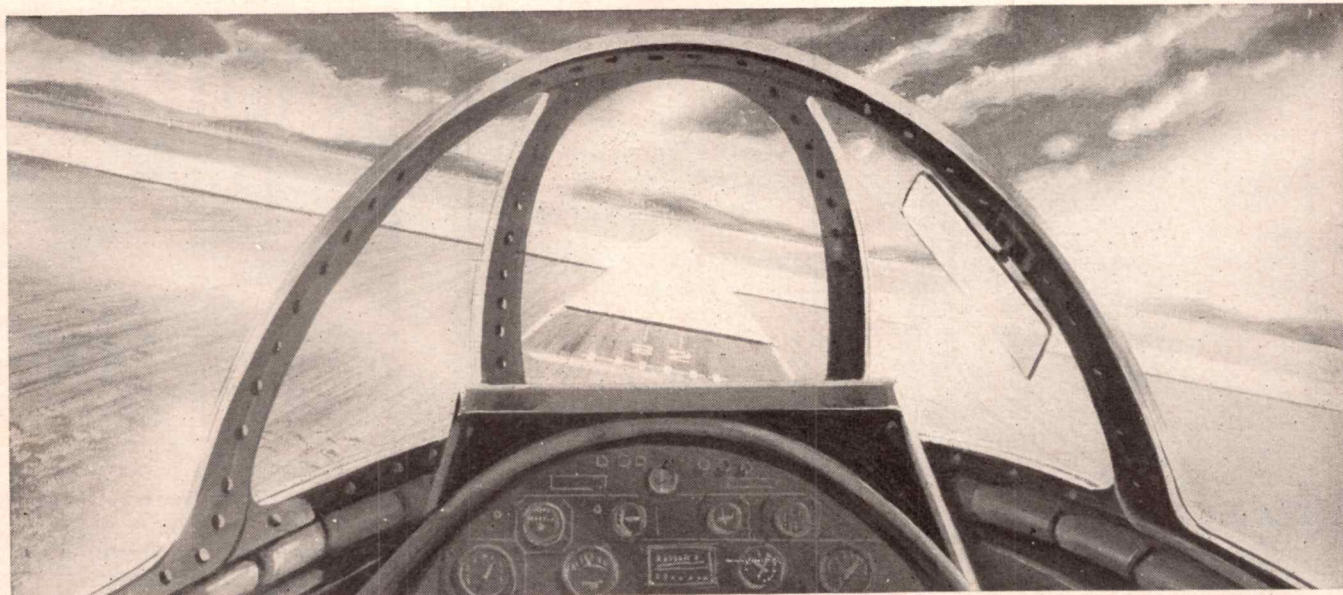
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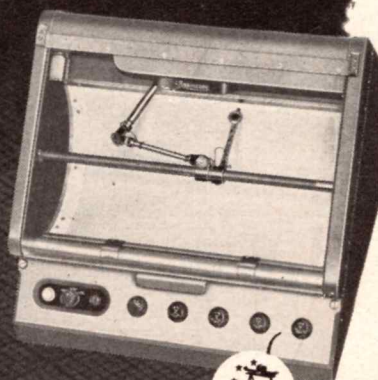
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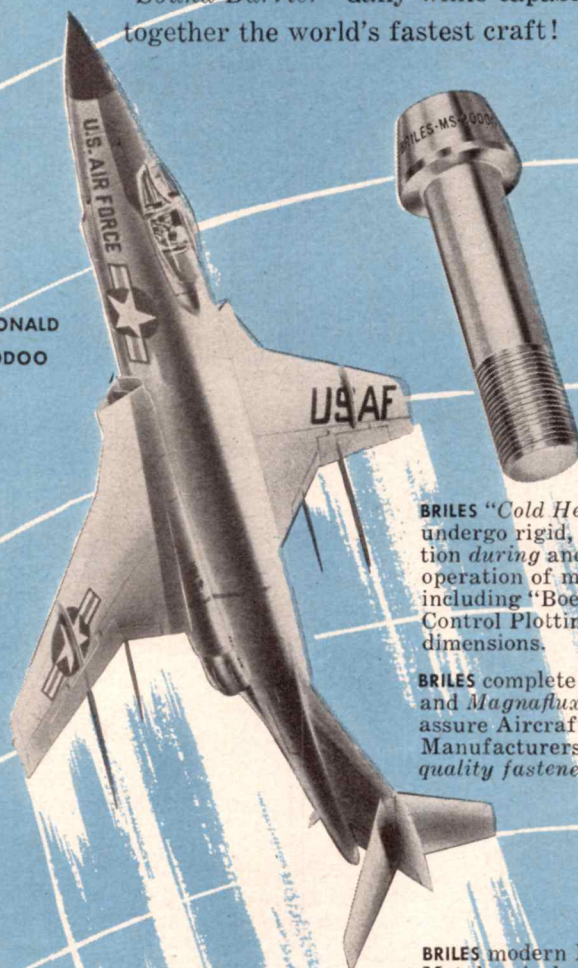
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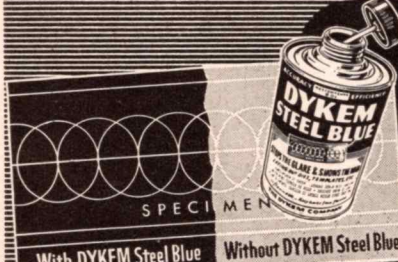
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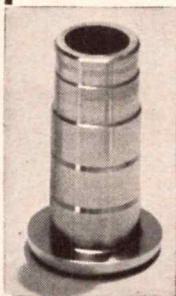
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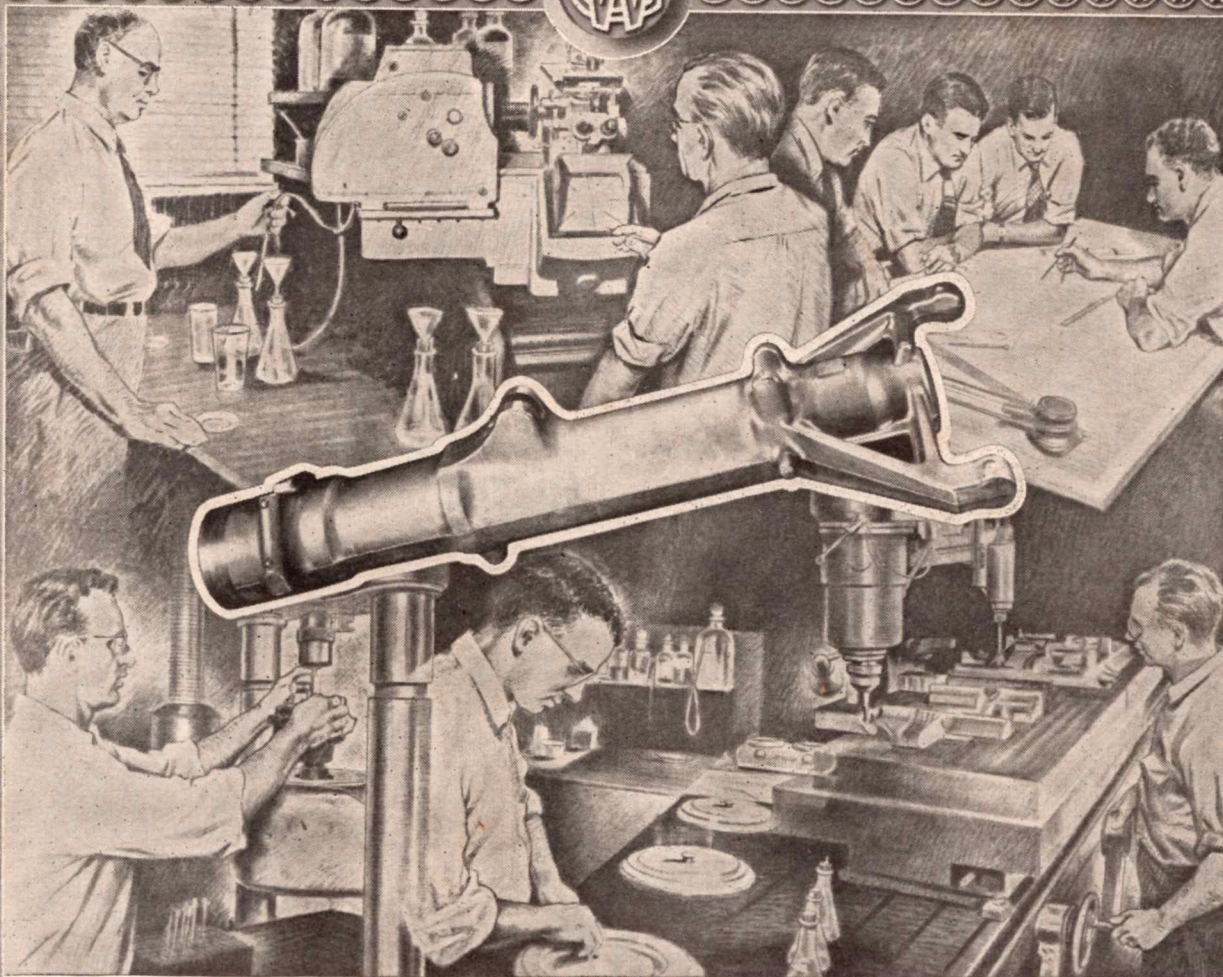
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